TEACHING HEALTH IN FARGO

MAUD A. BROWN

LANE MEDICAL LIBRARY STANFORD
1420 .B87 1929 OLD
Teaching health in Fargo / by Maud A. Br
24503267080

LANE

MEDICAL LIBRARY

LEVI COOPER LANE FUND

TEACHING HEALTH IN FARGO

The breakfast tray made in construction period is a health exhibit—but not so good a one as the child herself. The healthy child was the end purpose of the Fargo school health project.

TEACHING HEALTH IN FARGO

BY

MAUD A. BROWN

NEW YORK
THE COMMONWEALTH FUND
DIVISION OF PUBLICATIONS
1929

LANE LIBRARY

LANE LIBRARY

387
1923

FOREWORD

IN 1923 the city of Fargo, North Dakota,[1] entered into partnership with the Commonwealth Fund in a five-year demonstration of ways and means by which approved child health services might be incorporated into the permanent program of the health department and the public school system. In effect, the Fund loaned to the community a reasonably adequate and well-trained staff which introduced a unit program of interrelated health activities, and financed their work until the community found itself ready to absorb it and pay the cost itself.

In Fargo this staff included a demonstration director, a pediatrician, a director of nursing service and six staff nurses, a director of health education, a public health dentist (for a part of the demonstration period), a statistician, and a clerical force. Miss Brown, director of health education, served by official appointment as supervisor in the Fargo public schools during the school years 1923–1926. In September, 1926, the Board of Education accepted full responsibility for her program and appointed Mary L. Beal supervisor of health education on a regular salary basis. All the other essential elements in the demonstration plan were also accepted by the city and their continuance was provided for by public appropriation. The process by which this came about, and the specific activities which were thus introduced into the public service, are described in the general report of the demonstration.[2]

[1] Population approximately 27,000.

[2] *Five Years in Fargo: the Commonwealth Fund Child Health Demonstration.* (New York: Commonwealth Fund Division of Publications, 1929.)

71618

During the three years of her term as supervisor, Miss Brown led the way in the development of school health education by group and individual conferences with the administrative and teaching staff of the schools, by a series of bulletins to teachers, by demonstration teaching in individual classrooms, by assembling and circulating reference material for the use of teachers, and finally by assisting a committee of teachers in the preparation of a course of health study for the first six grades. Her work was marked by two main policies: first, every step in the development of the program was planned in advance and introduced through the regular administrative channels; and second, the emphasis at all times was on sound material and individual initiative, so that teachers were encouraged to work out their own methods rather than adopt ready-made pedagogical devices.

The Fargo schools are organized on the 6–3–3 basis—six elementary years, three junior high, and three high school. The newer elementary schools are built on the platoon system. The rest are being gradually reorganized according to that plan. The supervisory staff consists of supervisors, assistant supervisors, and special teachers of art, music, manual training and physical training, a supervisor of penmanship, and (since September, 1926) a supervisor of health education. The principal of each building has jurisdiction over the administration of the special subject, the supervisor over subject matter and method.

The schools are well supported by the community. The new buildings are built for growth and permanence; no expense is spared in construction and equipment. The school population of some six thousand is disposed among fourteen elementary schools (twelve public and two parochial),[3]

[3] At their own request the parochial schools shared Miss Brown's services and followed the school health program in full.

three junior high schools and one high school. The teaching load is average, the salaries average, the professional preparation average for the more prosperous small western cities.

Fargo teachers attacked the three-fold problem—health teaching, health supervision, and their effective coordination—with intelligence, vigor, and tenacity of purpose. The rapidly shifting group has kept, for the most part, a reasonable perspective; the elements of the program which were peculiar to the propaganda and experimental period have been sloughed off and the elements which were clearly adjusted to local needs have been selected and arranged in a sane and simple permanent program. The result is now on trial in the classrooms of Fargo.

CHILD HEALTH DEMONSTRATION COMMITTEE

BARRY C. SMITH, *Chairman*
DONALD B. ARMSTRONG
ROBERT E. CHADDOCK, PH.D.
L. D. COFFMAN, PH.D.
W. F. DRAPER, M.D.
PHILIP VAN INGEN, M.D., *Treasurer*
LIVINGSTON FARRAND, M.D.
SAMUEL McCLINTOCK HAMILL, M.D.
SALLY LUCAS JEAN
BARBARA S. QUIN
MILDRED C. SCOVILLE

CONTENTS

CHAPTER		PAGE
	LIST OF ILLUSTRATIONS	xiii
	INTRODUCTION	1
I	HEALTH EDUCATION: THE PROBLEM	9
II	DIRECT INSTRUCTION: THE FACTS OF HEALTH BEHAVIOR	15
III	CORRELATION: LINKING HEALTH WITH OTHER SUBJECTS	50
IV	CONTESTS AND RELATED DEVICES	117
V	CONCLUSION	138
	APPENDIX: THE HIGHER GRADES	140

LIST OF ILLUSTRATIONS

FIG.		PAGE
	The healthy child was the end purpose of the Fargo school health project	Frontispiece
1	Second-grade illustrations for health precepts	13
2	Visual instruction in the health values of common foods	18
3	A third-grader's diagram of Fargo's water supply	29
4	The model human trunk created great interest	30
5	An animated expression of a praiseworthy purpose	52
6	The all-over bath makes its debut in Fargo "art"	53
7	First-grade children enjoyed the preparation of cereals	56
8	The "lettuce party" reinforces health teaching	62
9	Daily health behavior in pantomime	66
10	Silent reading of health sentences	68
11	Dramatization combined with silent reading	69
12	Pantomime with figures and properties made in the classroom	70
13	Making paper furniture for a first-grade playhouse	71
14	The playhouse project in the first-grade program	72
15	A rather elaborate version of the "store" project	72
16	Playing "health examinations"	74
17	Third-graders give an original health play	77
18	A health movie and two fifth-grade showmen	79
19	Health reading books developed in a first-grade classroom	87
20	Reading lesson based on a butter-churning project	88
21	The reproduction fails to show the cheerful yellow of the sun	89
22	Complete repose as represented by a first-grade artist	90
23	"When she came in she was helthy"	91
24	Free cutting of paper in the first grade	92
25	Second-grade "art" work makes use of modelling	92
26	A sand table representation of The Three Bears	93
27	Building "health land" is perennially enjoyable	94
28	Posters, rapidly made, were displayed daily	94

29 Posters of a somewhat more lasting appeal 95
30 Free poster-making by second-grade children 96
31 The bath takes precedence over the Christmas presents . . 97
32 Cut-out pictures used as actors in a health play 98
33 In dress design periods the art teacher made incidental reference to numerous health considerations 100
34 Health cartoons made in the fifth and sixth grades . . . 101
35 Rabbits strengthen the appeal of "green leafy vegetables" . 103
36 Sound health facts in alliance with nature study 105
37 Obvious materials built into an arithmetic lesson 106
38 The health cafeteria was a real project 107
39 Geography lesson correlated with the child's experience . . 108
40 A good example of the pitfalls of correlation 109
41 Holland's traditional cleanliness served for many correlations 110
42 An admirable project in the study of North Dakota farming 113
43 A map of the state pays its respects to health details . . . 114
44 The teacher's notes help explain weight curves 120
45 An unusually substantial "health house" 122
46 The entire second grade helped make this "movie" . . . 123
47 Another graphic device—animated weight cards 124
48 Group rivalry is a help to willing but fallible memories . . 131
49 Spark Plug added a touch of fun to health behavior drill . 134

INTRODUCTION

THIS discussion is concerned with classroom instruction in the Fargo schools—a single phase of the health work of the Fargo teachers during the child health demonstration.

It may seem paradoxical to refer to instruction as merely a part of the teacher's health service, but in Fargo it is strictly accurate to do so. The demonstration was a five-year project in community cooperation, and not its least significant result was to reveal the teacher to herself and to her colleagues—the school physician, the health officer, the nurses, the public health dentist—as an important unit in a coordinated health program. From one point of view her range of services was much wider than merely the teaching of health; from another point of view her responsibilities as a member of the health staff expanded her concept of teaching. That the subjects of the curriculum are not ends in themselves—that teachers no longer teach geography, for instance, but teach children by means of geography—is a commonplace in modern educational theory, but it is still more often theory than practice. Fargo teachers learned that they could teach children by means of what used to be called "hygiene," and that the teaching spread inevitably into a broader contact with the realities of the child's life than any they had known before.

The evolution of health teaching in Fargo during the experimental years of the demonstration was two-fold: the teacher was oriented in the general public health scheme, and the teaching of hygiene as an academic subject developed into the teaching of health as a vital experience. The program of the demonstration as a unit, and the place of

the teacher in the unit program, have been set forth in Part III of the general report,[1] which should be read before, or in conjunction with, the present discussion.

The aim of the school health program, it will be recalled, was to institute for every child a personal health program which would enable him to reach and hold the highest level of physical health of which he was individually capable, to develop the public health program to a point where this became possible, and to give the child the facts necessary to make both programs self-perpetuating.

To this end periodic medical and dental examinations were offered to all school children; a generalized nursing service was provided which followed up the examiners' advice in school and at home, guarded the child against the spread of communicable disease, and offered continuing health supervision; immunization against certain communicable diseases was made available; and the classroom was made the focus of a systematic campaign for health behavior.

This campaign was begun in 1923 with an attempt to secure the instant adoption by every child of a completely adequate program of health behavior. This is not as unreasonable as it sounds. The program had to be adopted *in toto* if its effects were to be demonstrated, and the strategy of insistence on complete observance of a complete program is obvious. Its several items supported each other instead of competing for attention. Adequate diet coupled with too much exercise and too little rest, for example, is forever ineffective in health improvement. Adequate diet, adequate exercise, and adequate rest, simultaneously adopted, reinforce one another, and the struggle to secure their adoption is thereby shortened.

[1] *Five Years in Fargo: the Commonwealth Fund Child Health Demonstration.* (New York: Commonwealth Fund Division of Publications, 1929), p. 87.

The necessity of uniform observance in every home is equally obvious. If every child has to come in and go to bed at the same time, every child does. If every other child on the block can say, "Aw, Bill South don't have to go to bed at eight o'clock" the attack is doomed to failure. Fortunately propaganda in the community preceded and accompanied the campaign, so that the schools were relieved of the burden of forcing cooperation from reluctant homes as the beginning of their own task. Teachers were able to use such leverage as this: "Your parents promised to cooperate in the health program. Here's what they promised to do. . . ."

The necessity of a rigid non-substitute program of health behavior is evident also when one considers that no teacher has time or technical knowledge to juggle forty substitute programs. Concerted action sufficient to secure habit formation is forever impossible if it waits upon the education of every home to the point of thinking out its own model health régime. The layman here as elsewhere finds safety in standardization.

While the program as a whole was thus constantly kept before every child, emphasis was placed initially upon the points where local need seemed greatest. A preliminary round of classrooms in April, 1923, disclosed a general pallor and listlessness which led to the decision to focus the attack on iron in the diet, fresh air, and sunshine.[2] In the classroom, too, the teacher's attack was focussed on the points of individual need. She was not handicapped by a course of study which said, "This month teach milk"—even though her children were all getting their quart daily and going to the movies three nights a week!

[2] The full program was introduced in the fall of 1923. In the spring and summer of that year, introductory projects emphasized the addition of green leafy vegetables to the diet and the value of supervised outdoor play.

In order to make possible an individualized program which yet held fast to the simple fundamentals, a set of routine procedures was developed. These made constant individual application of the health precepts and so furnished the means of relating the subject matter of health instruction to cause and effect. Together they supplied the laboratory element of hygiene taught as a natural science. In plain fact, the health routines were the beginning and end of health teaching. Health behavior was the goal, health instruction merely a means of progress toward that goal. No amount of "teaching children to be healthy" would of itself have changed the health status of Fargo children. In reading the following chapters, therefore, it is important to bear in mind that all the pedagogical resources which they describe were essentially aids toward the regular, enthusiastic, and intelligent participation of the children in a health régime which had been outlined for them.

The health routines in which the Fargo classrooms were involved (in addition to medical and dental examinations, immunization, and home visiting by the nurses) have been described elsewhere[3] and will only be enumerated here:

1. The continuous observation of the individual child by the teacher. By keeping informal memoranda in record form the teacher brought together her gleanings from consultation with the nurse and the physician and from the records of the physician's examination, and added her notes in turn to the record of the physician. These memoranda recorded the child's progress in the correction of correctible defects and the major elements in his individual health problem.

2. The health habit record, kept by the child at school, and, for the first three years, also by the parent at home.

[3] Maud A. Brown, *Fargo and the Health Habits* (Child Health Demonstration Committee, Reprint No. 8). *Five Years in Fargo: the Commonwealth Fund Child Health Demonstration* (New York: Commonwealth Fund Division of Publications, 1929).

3. The health inspection (made informally while the health record was being marked). Children who gave evidence of illness of any sort, including colds and skin eruptions, were sent to the nurse. Requests for nursing visits to the home, whether for second-day absences, suspected illness, or the investigation of home conditions, were made on duplicate slips, on one of which the nurse reported her findings back to the teacher.

4. The taking of weight and height. This, conscientiously done, accurately recorded and sanely interpreted, became one of the best means of measuring, for classroom purposes, progress in health.

5. Relating health behavior to growth, by graphically recording the child's gain in weight at each weighing period on the weight report card, which bore also the teacher's summary of health behavior as reported by the child. (*See p. 6*)

6. Serving milk at school. This was done as an educational procedure, without regard to weight, as a matter of keeping children in condition.

It is clear that these procedures involved close team-play between the teacher and other members of the community health staff, particularly the nurses and the staff physician. Such team-play is a prerequisite of any successful classroom health program.

Reinforced thus by other workers, the teachers taught health—each in her own way, as determined by her background of training and experience. The methods they used were studied and evaluated; those which seemed best were organized into a tentative program which was put into trial use as the course of health study for the elementary grades. This is to be restudied at the end of each year's use and constantly adapted to current needs. In the form in which it was originally adopted in 1927 it appears on pages 34 to 49.

Not all the elements of this health program were new to Fargo in 1923. The physical education department, the school nurse, the home-and-school visitor, and the teachers

FARGO PUBLIC SCHOOLS

WEIGHT CARD

*Name*_____ *Address*_____

	Height	Average Weight	Actual Weight	To Gain	Food Habits	Sleep and Rest Habits	Cleanliness Habits	Play Habits
September								
October								
November								
December								
January								
February								
March								
April								
May								
June								

*September Age*_____ *192*____

FRONT

The Strength of the Nation is the Health of its people

The pupil's health habits are as reported by the pupil. Good food habits mean the eating of the "protective" foods (green leafy vegetables and one quart of milk) daily, in addition to fruit and cereal; and no tea or coffee.

Sleep (with open windows) should be of the amount specified on the daily health record.

Good play habits would include at least two hours of outdoor play every day, preferably more.

SIGNATURE OF PARENTS:

Copies of the Daily Health Record kept by the pupil in school will be sent to the parents on request.

BACK

were all making their several contributions to school health before the demonstration began—but these contributions were not coordinated. The state required that in teaching hygiene the schools should call attention to the physiological effects of alcohol and tobacco, but there was no other deliberately planned link between the study of physical well-being and the realization of physical well-being. How such a link was forged, how health teaching departed from the hygiene textbook, and after a vitalizing change, found its way back to the textbook—viewed not as the beginning and end of hygiene but as the manual of a natural science in which the laboratory was the child's own physical organism and the field was his environment—is the theme of the chapters which follow.

CHAPTER I

HEALTH EDUCATION: THE PROBLEM

THE problem of the teacher in health education is comparable to no other which confronts her. Among subjects of instruction ethics has perhaps more points in common with health than any other. Behavior is their common goal. Both are concerned with the outcome of race experience, which the individual must be led to accept and comply with long before he can think out for himself the reasons for doing so. But difficult as the task of teaching ethics seems to be, observance of the fundamental laws of behavior is the rule, and infractions the exception. Most children tell the truth most of the time; few children steal; most are reasonably considerate of their schoolmates. And no matter how inconsistently they may live, few parents question the ethical imperatives, or deliberately plan a program of misbehavior for their children. The situation is quite different when we turn to health behavior. Although most parents vaguely assume that the child needs milk, exercise and sleep, and are sufficiently distressed if the child is "constipated" to give him a pill, relatively few of them recognize that "thou shalt" and "thou shalt not" in the physical realm are as specific and final as in ethical tradition. By and large, the parents of school children do not yet realize that the growth of a child is subject to the laws of cause and effect, and that it is their responsibility to learn and apply those laws.

The situation which a teacher faces in teaching hygiene is therefore unique. She has to help the child to break wrong

habits already formed—not only his own, which would be a relatively simple matter, but those which are solidly entrenched in family routine, perhaps even in stubborn racial tradition which has survived marked changes in environment. She has to face an initial antagonism which is unknown to arithmetic, geography, or even ethics. She has further to counteract the widespread misinformation transmitted through the printed page, which to the ordinary human being is the court of last appeal. Worse than that she is sometimes confronted by the unanswerable—"Mother took me to the doctor and he said it was all nonsense to worry about me; I'd outgrow it"; or the dentist's "It's only their baby teeth." She is dealing with a body of facts which do not stay put, with a science in which the "little knowledge" is ten-fold dangerous; and her colleagues—the school doctor, dentist, and nurse—often fail to understand both her rôle and their own in relation to hers.

Offsetting these difficulties are two saving factors: the typical child is fundamentally interested in attaining physical excellence and responds easily to the teacher's effort to enlist his efforts toward self-improvement; and if the teacher confines herself rigidly to fundamentals there is a generally recognized body of health facts which are consistent and available. The wise teacher concentrates, therefore, on getting actually into continuous practice the essentials which she presents upon authority.

This sounds easy—but it is not. John may go on forever dividing 63 by 9 and getting 8 without making it any harder for Bill next door to get 7. But bed-time! Bill's mother finds John's bed-time an important contributory factor in Bill's. Habit, in matters of obvious behavior, must be community habit before any one child's behavior can become automatic on the level of unconscious performance—

which is the only safe place for health habits in childhood to be.

So the inescapable first phase of installing a health behavior program is propaganda: building up a favorable attitude which produces a right-about-face in community behavior. The work usually considered as classroom teaching begins when the "everybody's doing it" stage has been achieved by propaganda. The sequence by which a sound health régime is introduced into the life of the school child, built into his habit patterns, and made automatic in his behavior is *propaganda*, *drill*, and *rationalization*.

Initial presentation in health education as in any other teaching is of the utmost importance. Good teaching follows the same psychological laws as good salesmanship: the first impression either makes the sale or leaves the possible customer a wary and discouraging prospect for the next salesman. The teacher's first presentation must therefore contain a large element of propaganda; that is, it must be convincing, warmed by emotional motivations, provoking to action. It must be focussed to a single clear point. It must be offered in terms of familiar concrete experience, in the child's own vocabulary, and with an appeal to the child's strongest interests. The more points of contact with the child's actual experience the idea can be given, the more quickly will it become part of the body of accepted experience and criterion for the judging of new facts. The more emotional color it is tinged with, the deeper its initial imprint and the greater the ease and effect of subsequent drill which eventually turns the paths of least resistance into habitual behavior patterns.

Naturally, the longer the initial presentation of health precepts to the child has been delayed, the more difficult the task becomes. Appeals which would serve with young

children become ineffective at a later age, and it requires great wisdom to select mature motivation, interesting drill, and adequate rationalization for a régime which should be habitual long before ability to reason it out has been developed. The child of twelve must be appealed to through reason, but at twelve the laws of health must still be accepted, for the most part, as axiomatic. This was a difficulty which confronted the Fargo teachers when they were called upon to introduce the new health régime simultaneously in all the elementary grades. After the first school generation has become fixed in the new behavior, it is true, the problem of later years is merely to hold the ground gained and to train up the more plastic younger children year by year.

Holding the ground involves drill—successful repetition of the initial presentation, also connected up with the child's life at as many established points of contact as possible, and also motivated by as many colorful appeals as can be found. Successful drill must stop as soon as performance has become habitual; it must concentrate on the one objective not yet reached, without scattering of effort or "rubbing it in." Clearly it must be to a considerable extent an individual matter.

But holding the ground gained is no easy matter even with the aid of drill. Health essentials are the same, roughly, for the kindergarten and the high school child. But if the child's awareness of them is not synchronized with his developing experience, if they are not constantly represented in terms of new interests, their practice tends to become uninteresting; they are relegated to the realm of things "babyish," along with the dolls and the kiddie-cars. Consistent team-work of the teachers, year after year, makes

FIGURE 1. Drill in the health habits was served by such methods as this. Second-grade children brought their toys and built up illustrations for the health precepts which were printed on silent reading cards.

this progression easier than the initial creation of the habit pattern, but it is a task calling for great flexibility in drill and ingenuity in rationalization.

Rationalization may be accomplished both by direct instruction and by correlation. Direct instruction, in Fargo, always preceded correlation. Every fact was first taught as a fact, as hygiene subject matter, and then allowed to assume its proper place in relation to other subjects. In the beginning the correlation was consciously planned for, as a drill method to get the new facts established in memory as quickly as possible, and as propaganda of a

powerful type, to create the impression that the recommended behavior program was to be taken for granted in all connections. Very early, however, this stage of conscious correlation passed into the natural and permanent stage at which the health interest vitalized the other subject matter. The teacher was first to make the gesture of incidental reference to health, but soon the children themselves began to make it. This marked the passing of the propaganda stage. The good teacher is always ready with the gesture, however, when the children do not make it, and no program is ever wholly beyond the need of propaganda.

Indeed these three stages of health teaching blend into each other both in time sequence and in quality. Even at the outset propaganda must be justified by reason as well as colored by feeling. If drill is to be kept abreast of experience it needs constant re-rationalizing and re-motivating. Rationalization must ever be warmed by propaganda to the kindling temperature.

Instead of using these overlapping phases of the teacher's task as a basis for further discussion, therefore, it will be more convenient to group the experimental work which is presented in the following pages according to the three methods which the teacher has at her disposal. Two of them—*direct instruction* and *correlation*—have already been mentioned as contributing to rationalization; in fact they are necessary at every stage. Both are valid and permanently useful, for health content is intrinsic to the method employed. The third—the *device* or extrinsic incentive—is useful as a temporary drill method on one important condition: namely, that the children consciously and voluntarily adopt it as a help toward a goal which they have already chosen to strive for.

CHAPTER II

DIRECT INSTRUCTION: THE FACTS OF HEALTH BEHAVIOR

THE teaching of hygiene in the Fargo schools began with a textbook. State law in North Dakota requires a minimum of fifty minutes of hygiene teaching per week, in all grades below the high school, from a textbook in the hands of the pupil. This law was being complied with in the elementary schools when the demonstration began in 1923. Hygiene was being taught as a descriptive, general-information subject, on much the same basis as reading or geography.

The three years of experimental work during the demonstration did not displace the textbook. The textbook must be the keystone of any permanent plan of teaching any subject in the elementary public schools; the rare teacher who wishes to discard the text is not allowed to; and by and large it is a good thing that this is so, for it is easier to standardize authentic fact in textbooks than in teachers. The textbook period therefore was never taken off the time-table of the grades. The teachers were told to go on just as they had been accustomed to do with the textbook until further notice.

That the book in use was long outdated was of course recognized, but the supervisor made no recommendations, since the choice of a text suited to the new program should be made at the end rather than at the beginning of the experimental period. No dissatisfaction with the book was observed at first, and none was stimulated. The demand for

a change came in due time from the teachers, not from the supervisor. In the second demonstration year many teachers called attention to the divergence of the text from modern science, and during this year all the best textbooks in use in elementary schools were added to the library. The teachers compared these with great interest and by the third year the first task voluntarily assumed by the Teachers' Advisory Committee was to recommend first, second, and third choices for a new text. At the superintendent's request the list was submitted to him with a list for supplementary reading. The choice of the text was then made by the superintendent.

By the time the new textbook came the program was ready for it. In the interim attention had been focussed on the development of a program which shifted emphasis from the book to the living subject matter, the child himself. In the fourth year of the demonstration, when the Fargo schools assumed direction of their own health program, the textbook clicked into connection with the laboratory and field work of health education—the child himself the laboratory, his health environment the field. The amount of time devoted to "hygiene" was augmented only ten minutes a day—but it functioned in terms of the living child. The strategic position of the basic text was clearly understood by teachers who were no longer limited to the printed page.

The Basic Teaching

This brings us to a further account of what happened in the three years while the textbook was in partial eclipse. The teachers' task during that period was simple—and appalling: to teach in as condensed and clear a form as possible the essential facts of health behavior, and to bring

them immediately, through the children, to the active attention of every Fargo family with children of school age. The essential "whats" of health behavior, summarized and applied in the daily health record, were made the subject of the most intensive drill that could be devised. At the same time the "hows," where actually essential, were included. The initial presentation of these "whats" and "hows" was so strongly motivated as to be legitimately classed as propaganda. Rationalization of the recommended items of behavior, by giving the reason or reasons which the best authorities agreed on as justifying them, went on simultaneously with propaganda and drill.

The health record had been studied and formulated with close reference to particular local needs. The essential factors on which it was based may be summarized briefly:

FOODS

The theory of "protective foods"[1] was adopted as the official nutritional policy. That a quart of whole milk and two raw leafy salads a day will "protect" any diet which satisfies the caloric requirements is easily understood by the mother. In applying the plan to local needs some changes in existing food practices were necessary. The drinking of the quart of milk was interfered with by the common practices of coffee-drinking and over-indulgence in sweets between meals. Both were put under the ban; the positive observances followed without great difficulty. To insure sufficient caloric intake, cereals were included and, to tempt the child to make a real meal of breakfast, fruit was recommended. To bring this protective dietary within reach of the poorer households the value of raw cabbage as a leafy vegetable and canned tomatoes as fruit was emphasized. Mid-morning and mid-afternoon milk was served at school to safeguard the child against school fatigue.

A sheet of simple, clearly worded directions for the cooking of vegetables and cereals, prepared by Alva Bales, head of the

[1] As formulated by Dr. E. V. McCollum.

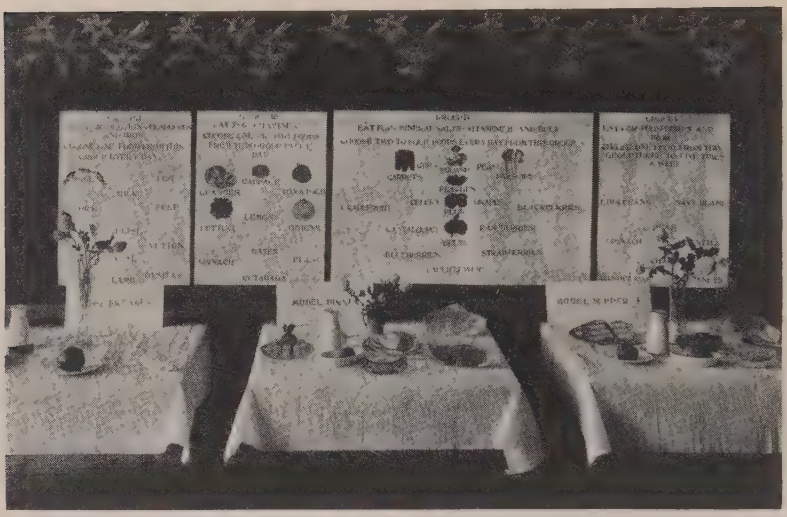

FIGURE 2. Good visual instruction in the health values of common foods is featured in the third grade.

home economics department in North Dakota Agricultural College, was distributed to teachers and mothers.

SLEEP AND REST

For brevity, the children were told that they grow while they sleep. A conscientious attempt at greater scientific accuracy of statement failed to register in any single observed instance. From ten to twelve hours of sleep, according to age were prescribed. Rest before meals was one of the items which gave the children the benefit of the doubt. Its defense was made on a purely empirical basis, since the improvement observed seemed so much greater than might be expected from the reasons that could be given the children. While this was the most difficult of all the items for the children to follow, its value was not often disputed—for those who did rest showed results. Since it was usually the last step to be yielded when an otherwise perfect program failed to show results, it often proved the turning point, and its benefit was more obvious than if it had been adopted earlier.

EXERCISE

Two hours of after-school exercise—or enough to make up the minimum of four hours daily of big-muscle activity—were required. The little folks were taught simply that exercise makes them grow strong. The fact is so obvious that it was never questioned. The older pupils were given physiological information as to fatigue and recuperation.

CLEANLINESS

The danger of infection from unwashed fingers, food or foreign bodies carried to mouth and nose was taught from the beginning. The duty of protecting others by covering coughs and sneezes, and staying at home during colds, was emphasized from the first grade. Cleanliness of person was taught as an esthetic value. In the case of the oldest children only was any physiological explanation attempted. Cleanliness (internal) was made the basis of the teaching regarding elimination. The use of "scrubbing-brush foods" and much water, much exercise and regular visits to the toilet were taught as essential to internal cleanliness.

The teachers were furnished a list of most carefully simplified reasons for the desirable procedures, and requested to drill in every way their ingenuity could devise to get these thoroughly absorbed at once. The simplicity of the reasons given may seem inadequate—until one tries to augment the list; very little of our knowledge of health essentials is out of the empirical stage even yet. The children were urged to pass on these facts to the parents, and health questions were printed in the newspapers with the suggestion that the children could supply the answers. This formed a very strong leverage. When every teacher knows that parents are going to ask certain questions the children learn the answers. Many "spelling down" matches on these health facts were held, and the children enjoyed reviewing the program through getting meals with food models.[2]

[2] In demonstration lessons taught by the supervisor.

Question boxes opened in each room by the supervisor helped until the teachers caught their breath.

The Use of Tests

Drill was varied by the use of various tests, much enjoyed by the children. Such tests, so popular just now, are used by this group of teachers with a very sane reserve, and for drill only. Where there is a new interest to be expressed or an experience shared, the more natural narrative in written or spoken language is employed. For instance, the interest of third-grade children in the doings of the Mandan Indians[3] would not have been served by filling in words in blanks. They wrote with great zest the story of the life which they had been reliving with the Indians—and the frequent health references were not dragged in. But for actual memory drill on the health facts needed for the rationalizing of the program much use was made of tests such as those given in the following pages. The catechismal severity which the statements seem to show on paper was really never present, since they were made in an atmosphere warm with propaganda and were immediately caught up into a fabric of correlation. Indeed the classroom discussions of these didactic statements were so full of interest that they were with difficulty kept from encroaching on the time of other subjects. The tests reproduced here will at least suggest the content of the direct health instruction which was being given in all the grades.

First Grade (AI)

Silent reading lesson: The following sentences (hectographed) are given to the pupil. He selects the correct word from the column on the right and copies it in the appropriate blank space.

[3] See p. 83.

Put in the missing words.

1. I ..... this morning.	*tooth*
2. I ..... my teeth.	*hands*
3. I drank a glass of	*brushed*
4. I had ..... for breakfast.	*washed*
5. I washed out my ..... brush.	*sun*
6. I hung it up to dry in the	*germs*
7. The sun will kill the	*milk*
8. I went to the	*water*
9. Then I washed my ..... again.	*toilet*

Second Grade

Silent health reading: cross out the one that is wrong for a child to do.

1. Drink milk	Drink coffee
2. Sleep only six hours	Sleep eleven hours
3. Brush teeth twice daily	Brush teeth twice a week
4. Sleep with windows shut	Sleep with windows open
5. Play outdoors	Play indoors
6. Eat cereals	Eat pancakes
7. Eat vegetables	Eat pie
8. Sit tall	Sit with round shoulders
9. Eat fast	Eat slowly

Third and Fourth Grades

Yes and No test.

1. Do we need to wear sweaters and coats in the school room? .....
2. Do you need a clean handkerchief every day? .....
3. Is after breakfast a good time for your bowel movement? .....
4. Will it make you strong to sleep with your windows closed? .....
5. Do you need more than one bath a week? .....
6. Are ice-cream cones, between meals, good for us? .....
7. Should up-to-weight children stay up late? .....
8. Are soups made with milk good for us? .....
9. Are baked potatoes a better food than fried potatoes? .....
10. Is candy as good for us as fresh fruits? .....
11. Are cornflakes as good a food as cooked cereals? .....

12. Do raw leafy vegetables give us a good appetite? .....
13. Should we wait till our teeth ache before we visit the dentist? .....

Second and Third Grades

Put the right word in the right space.

1. Milk is better for us than	*warm*
2. We take ..... to keep our bodies clean.	*school*
3. We need to wear ..... clothes in the winter.	*rest*
4. Children grow when they are	*happy*
5. We should ..... when we are tired.	*wash*
6. Children should ..... outdoors after school.	*coffee*
7. We should ..... our hands before eating.	*sleeping*
8. We should wear ..... when it rains.	*baths*
9. Healthy children should be ..... children.	*rubbers*
10. Children should not go to ..... when they are sick.	*play*

Second and Third Grades

Choose a good health dinner at this hotel. You may have one from each course. Be wise!

Tomato Soup Vegetable Soup Clam Chowder Chicken Soup
Celery Pickles

Roast beef with brown gravy
Turkey with dressing, cranberry sauce
Roast pork, apple sauce
Baked chicken with dressing
Fried ham and eggs

Baked, fried or mashed potatoes

Boiled Cabbage Celery Sliced Tomatoes Cold Slaw
Corn Beans Spinach Peas Radishes

Fruit Salad Cucumber Salad Vegetable Salad Lettuce Salad

Apple Pie Cherry Pie Baked Apple and Cream
Chocolate Pudding with Whipped Cream
Jello and Cream Ice-Cream and Cake Fruits
Tea Coffee Milk Cocoa Buttermilk

Fourth Grade

MISSING WORD TEST

Growing boys and girls need *more* sleep than *grown* people because during *sleep* the food we have eaten is made over by the *cells* which make up all parts of our body into *growth* and repair *material* so all parts of us are ready to begin work in the *morning*. An easy way to say it for little folks is that we grow while we *sleep*. You can understand that the *cells* really get all *ready* to *grow* and the new *materials* are really made when the *body* is *exercising*. For proper *growth* you need *ten* hours of *sleep every* day. You should go to *bed* at the *same hour every* night so you will get the habit of *regular* sleep. Staying up *late one* or *more* nights makes it *harder* to go to *sleep* on time the *next night*. Grown folks need less *sleep*, *food*, and *exercise* than boys and girls because they need only to repair their *bodies*, not to *grow larger*. If we wish our brains and *all other* parts of our bodies to *grow* strong we must have the *right* foods, plenty of sleep during which to make this food into *growth material*, and plenty of *exercise* when we are awake.

We should rise *as soon as we awake*. Lazy brains *do not grow* strong. When we *are awake* we should make our brains *work hard all* the time either at *work* or play. For good brains we need the *right* kinds of *food* as for the other parts of our *bodies*.

Our big muscles need four hours of *exercise* every day. All parts of our body need plenty of food, *sleep*, and *exercise* at *regular* hours. If all *parts* of the body have *regular habits* they can *work* together better and *grow* better.

Sixth Grade

TRUE AND FALSE TEST

1. Dairies, markets and bakeries should be regularly inspected.
2. Any water is good to drink.
3. People should dispose of their own garbage.
4. The board of health should quarantine for contagious diseases.
5. Any one should be able to buy tobacco or alcohol.
6. Clean-up week should be observed.
7. Vaccination is unnecessary.
8. Quarantining is unnecessary.
9. Toxin-antitoxin prevents tuberculosis.

10. Tuberculosis is not a germ disease.
11. Tuberculosis is spread by spitting.
12. Cattle often have tuberculosis.
13. Herds need not be inspected.
14. Germs breed in the sunshine.
15. Rain barrels should be covered.
16. Mosquitoes do not carry disease.
17. Rats carry disease.
18. A "dump" is the best way to dispose of garbage.
19. Diphtheria should not be quarantined.
20. Every town needs a board of health.

The Course of Study

By a purely empirical process, the results of the three years of experimentation were gathered up into a course of health study which then became an official guide to the teacher. Out of all the methods used in all classrooms, those which got best results were reported by the individual teacher to the Course of Study Committee, which tabulated and restudied them and undertook, with the help of the supervisor, to assemble them into a balanced and consistent outline. This committee of teachers, appointed by the superintendent of schools, met weekly during a period of about three months in the spring of 1926, with four final meetings early in 1927. What seemed to them to be the best experience of the group now appears in the course of study beginning on page 34, which has been tried out during the school year 1927–1928 and, with some modifications, stands approved.

The difficulty in the work of the Course of Study Committee was to determine the most appropriate levels for the permanent allotment of subject matter. Arranging any course of study by grades is a somewhat arbitrary process and must always be regarded as tentative. As community consciousness is developed and educated there will be a continuous shift of subject matter from higher to lower

grades as the level of information and practice in the home is raised. The objective of health education in the schools is that each child shall develop a satisfactory program of health behavior. This behavior program, starting from personal health habits, moves progressively forward as the child's horizon widens from home and school to neighborhood, and, finally, city-wide problems which are conditioning factors of his own and his fellow's health.

Health essentials are few. They are the same for each age group. They are axiomatic. This combination creates a teaching situation unique in its difficulty. As analyzed in the preparation of the Fargo course of study it resolves itself into a two-fold problem: first, fitting the knowledge which is needed to rationalize behavior to the successive stages of developing intelligence, and second, adapting the motivation grade by grade so as to create the warmth necessary to unite knowledge and attitude in permanent habit.

Methods follow as the outcome of the action of motivation on subject matter—and this is their only legitimate source. It has been the aim of the committee after study of all the methods used experimentally to keep only those which showed evidence of this legitimate parentage. While the main sequence of motivation is, perhaps, carefully observed and recorded in the work of this group of teachers, it is probable that in the upper grades no one of the motives active in any of the preceding years is entirely absent. The pleasure in exercising the developing powers of association is in itself sufficient motivation.

Since the Fargo program was begun in all grades simultaneously, the children of all ages started their health progress at the same level—the new routine performance of the daily program of personal health habits. The first

grade remained at this level. The second advanced to the simpler "whys," and began to apply the new standards to their immediate home and schoolroom environment. The third stepped up to more "whys," and marked time with continued review through correlation, while their interest in personal health habits reached out and laid hold upon community problems of sanitation. Here it is that the health stories and supplementary readers were most in demand. The fourth took a big step up to the rest of the "whys," and stopped there. The next higher grades ruminated over the health information already acquired. There is real joy at these ages in discovering new reasons for familiar practices and in discovering corroboration in the printed page of the textbook.

Third-Grade Problems

Theoretically no one believes in teaching third-graders about germs. But it soon transpired in Fargo that this must be done in order to set straight misconceptions already acquired. The kindergarten teachers were asked to question their children casually and make note of the ideas revealed as to the nature of germs. Among the answers received were these:

A germ is a kind of an angleworm.

Disease worms.

Germs can come in through a window through just a little crack. They're in the air.

Germs are little tiny things that give people diseases.

Little baby bugs.

You get germs if you eat too much sugar.

Bugs in your finger nails in the dirt.

When somebody blows a horn and then somebody else blows it he catches these black things.

A germ is a sugar-bowl; it's in my book that way.

German bugs that have poison in them.

It seemed clear that the children's garbled information should be corrected as soon as possible, and much experimenting was done during the first three years in the effort to do so. Such favorable results were obtained by one teacher who made "potato gardens" and demonstrated their growth of bacteria to third-graders with the hand lens and the microscope that the plan was incorporated in the third-grade section of the course of study. Honest effort to make it work in several classrooms, during the first trial year of the course, led to the belief that it should be dropped. It is felt that it is better for the children to take the teacher's word for the presence of microscopic organisms than to risk the effect of demonstrations that do not demonstrate because scientific imagination is still undeveloped.

Third-graders were found ready, however, for the beginnings of field study of sanitation, and here their interest in personal health reached out to the public protection of personal health. Out of half a dozen trips made experimentally during the first three years, two have been selected as the most feasible and the most important in laying the foundation for a knowledge of community sanitation—one to a pasteurizing plant and one to the city filtration plant. Other trips made by groups from the lower grades to a cereal factory, a flour mill, a bakery, a creamery, a cheese factory, a chicken ranch, and a diversified farm were reported on favorably by teachers who arranged them, and such trips will no doubt be made voluntarily in addition to those scheduled in the course of study.

The observation and class discussion of sanitary conditions in the stores and on the streets are common in all grades, as is indicated in the samples of correlation with oral and written language study which appear in the following chapter. The interest in community sanitation continues with growing

emphasis until it reaches its peak in the junior high school in the study of public health practices in the general science course. In three different years spot maps have been made of the fly and mosquito breeding places discovered by junior high school pupils in a block-by-block survey of the city. The technical study of public health problems in the high school is an interesting post-demonstration development which cannot be described here.

The selected third-grade stories of field trips which follow suggest the range of observation of which these children are capable. The first two stories, in comparison with the others, show the difference between directed and undirected observation; without the teacher's guidance the trip is merely an amusing adventure.

Friday we went to the Fairmont Creamery. The man took us to a big room made of cement. A man was squirting the hose. The water made a big puddle on the floor. I stepped in it.

We went in to a place where they picked the chickens. It smelled terrible in that place. We had a good time.

When I went to the Fairmont Creamery I was very excited. I saw a wheel go around with dried butter milk. I like to see the dried buttermilk. I like the ice cream the man gave us. I saw some men making cottage cheese. I liked to see the ice cream freezers. They sterilize all the bottles. They pasteurize all the milk to kill all the little germs that are in the milk, so people that get the milk will not drink the germs.

Miss Beal took us to the filtration plant. Mr. Aliff took us through the plant. First we saw the mixing chamber. This was where they put in the lime and iron sulphate. They make the water soft. It goes to the settling basin to leave the dirt and germs. We did not see the settling basin. They put in chlorine next. This kills the germs that are left after that the water goes through the filter. There is sand and gravel in the filters. Then the water goes to the storage well. The water is tested in the laboratory and we drink it from our faucets.

First we came to the coal chutes, and then we came to the basement where there were bins for coal. They use 40,000 pounds

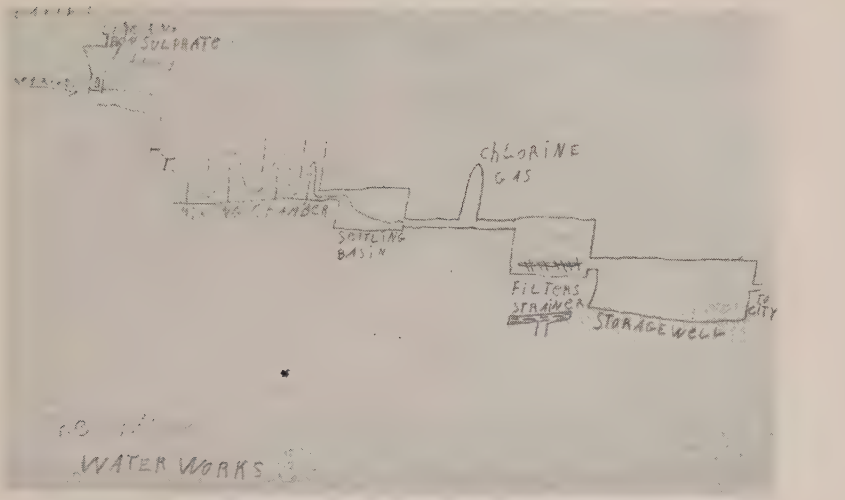

FIGURE 3. A third-grader here records his excellent understanding of the essentials of the process of providing pure water for Fargo to drink.

of coal a day. The furnace was 3000 horse power. They boil the buttermilk to get all the water and then it is pressed into thin sheets. It is sold for 9½c. a lb. They feed it to chickens and pigs. And then we came to the refrigerator rooms, and they had it as low as 1 degree below zero in one room. They had 5 churns that held 1000 pounds of cream. They only put 800 pounds or 300 gallons at a time. The milk and cream goes through pipes to pasteurize, when they pasteurize they heat it up and this kills the germs. All over the creamery it was very clean. They were using the hose to clean the floors. They wash the men's clothes. And they were making ice cream in a big churn, they could make 10 gallons in 15 minutes. They gave us some books that we could read and some ice cream. There were 15 ladies testing the eggs; they had little boxes with two lights in and they held each egg up to little lights. If they were clear they put them on one side but if they weren't they put them in another box and these eggs were separated and canned and sold.

After visiting the filtration plant, the children in one third-grade classroom made a model and drawing of the apparatus (*Figure 3*).

FIGURE 4. The model human trunk created enthusiastic interest as a means of giving older children some understanding of anatomy.

The Upper Grades

The difficulty of the problem for the upper elementary pupils led the course of study committee to add for future use two important items not developed in the three years' experimental work. These were the study in the fifth grade of the gross mechanism of the human body (since all the information that could be given without this background had already been taught in the earlier grades) and, in the sixth grade, the study of the school physician's examination and of the significance of each item. Each of these plans was tried out by teachers who volunteered to make the experiment, and favorably reported upon. They have therefore been incorporated into the courses of study.

The study of the elements of structure of the human body as outlined in the fifth- and sixth-grade sections of the text is supplemented by demonstration from a model trunk (*Figure 4*). The enthusiasm which this manikin evoked when it was added to the teaching material in the spring of 1928 expressed itself näively but unmistakably in the written comment which followed one hasty lesson in each school. The most surprising discovery, it appears, was that the stomach is so inadequately small! Several children registered their decision to become doctors or nurses. A few fragments from these compositions follow:

The story of my body. I was glad when the inside of a body was shown to me, to let me know what I looked like inside. There were many things I saw that were interesting. I thought to myself what a wonderful body we have on us. I learned some new things about my body.

I have noticed a startling thing that I never have known before. It is that the stomach is smaller than I thought it was, I believed that the stomach took up most of the room in the body. I have never known what the diaphragm looked like till the manikin was shown to me. I also thought that the pancreas was the thing in the stomach of an animal for sweet bread. I surely thank Miss Beal for letting us see the manikin, for it was very interesting.

I thought it was just wonderful to see the insides of a man or lady. I was very glad that Miss Beal brought the manikin for I had often wondered what it looked like inside of a man or lady.

I think this is a very interesting subject. I also found out many useful things such as the lungs, heart and other things. I think this helped the class and me more than the health books. I now know what a wonderful thing the body is and wish you would come again.

I thought the stomach was too small to hold all the food I ate for breakfast.

That was the best health lesson we've had yet!

I learned that there are many parts of the body. Our body is a great thing to us. We do not think that it is so much when we look at it, but our body is of a great deal of use.

The model furnished the solution to a difficult and typical situation. The importance of the pupils gaining in some way or other a reasonably adequate conception of the gross internal structures of the body was recognized by the committee. One member, a principal, volunteered to give first-hand dissection a careful trial in her fifth- and sixth-grade classes. A chicken was chosen—a food animal, that there might be no disturbing strangeness about the process. The verdict was entirely favorable. The pupils enjoyed it. There were no attendant "horrors." The procedure was, therefore, incorporated in the fifth-grade course of study.

In actual practice, however, in its first year of trial use, it transpired that this type of work was so foreign to the experience of the elementary teachers that, with the best will in the world, they did not in most cases, carry it out. Even the offer of the local packing plant to furnish a complete outfit of pig viscera gratis left the teachers, for the most part, cold.

The model of the human trunk, the next attempt at a solution seems a satisfactory one, particularly when its use is supplemented by sundry fragmentary contributions of giblets from the Sunday dinners. These organs give the idea of texture and consistency which the model alone does not furnish. By observing both, the children acquire a fairly adequate notion of their internal topography. This seems about all that can reasonably be expected of elementary teachers in general. It is neither possible nor desirable to force a new and untrained-for procedure upon teachers in service. The model (plus the giblets) does very well.

In the study of the report of the school medical examiner, only one complicating feature was presented. The information which the form carries is naturally individual and confidential. One teacher who volunteered to experiment with

the use of the record in her sixth-grade class, developed a simple procedure which safeguarded the confidential nature of the findings. For brevity and ease in tabulation, the findings of the school physician are entered in code. The teacher, after preliminary lessons as to the significance of the various items of the examination, gave each child a new blank, and read to each pupil the notations of the doctor in code. When all the codified notations had been copied the key to the code was placed on the board and each pupil deciphered his own record. Thus no child knew what the report of any other child had been. The added zest for the correction of defects and the improvement of their health ratings which this group gained was very convincing testimony of its value in the scheme.

Arbitrarily, also, the first aid practice usually reserved for the junior high school was brought down to the sixth grade. This was largely because the children show greater enthusiasm over it at this age than later. The beginning of Scout and Camp Fire membership lends interest to this feature of the work which it is wise to capitalize.

Aside from these three additions to the information furnished the upper intermediate pupils, the objectives and methods here were the natural outgrowth of those of the earlier grades. The objectives are really the same for all—the optimum observance of personal health habits for each individual, plus the knowledge necessary for the progressive rationalization of this behavior for every grade.

The course of study, as now adopted, shows an easy and steady progress—one wide plateau for each grade. The Fargo teachers do not look upon this outline as a finished product. It is merely a setting down in consecutive order of the items which, individually tried out, have worked. It

is offered in print not in any respect as a model for imitation, but in the hope of tempting other teachers similarly to compile their trials and errors and to compare notes. The Teacher's Committee[4] invites correspondence with comments and suggestions from other teachers.

THE COURSE OF STUDY

FIRST GRADE

I. *Objectives*[5]

A. Health behavior

1. To carry out the whole program of essential health habits at once as a unit.

2. To perform these in the proper way, whenever the manner of performance is a health essential.

3. To begin conscious cooperation for health with other members of his home and school environment.

B. Health knowledge

1. To know all the items of the program of essential health habits, and how these should be performed when the method of performance is a health essential. No reasons are taught, the teacher's word being sufficient.

2. To develop a health vocabulary which will make it possible to include health topics in daily work. The vocabulary should include the external parts of the body, the foods and words related to sleep, rest, cleanliness, play, sunlight and fresh air.

II. *Methods*

A. Daily review of the items of the health record with informal discussion of individual accomplishment.

B. Daily health inspection is included as incidental to the daily review of health habits.

[4] Virna B. Johnson, Principal of Washington School, Chairman.

[5] In primary grades, the distinction between "health behavior" and "health knowledge" is purely formal. As the child grows older he increasingly rationalizes his performance. So this list of essentials of health knowledge grows longer, while the actual behavior remains largely the same.

C. Frequent pantomiming of these items in order to get the performance accepted quickly by the neuro-muscular mechanism. The use of the printed flash cards (naming the action) is a good way of beginning and of varying this exercise.

D. "Playing house" to take the first steps toward the development of environmental consciousness.

E. Incidental and very casual reference to health throughout the course of the day.

F. Use of weighing as an incentive. The gain should be used as a sign, not as a goal in itself.

G. Educational use of milk serving period.

III. *Motivation*

A. Desire to please teacher.[6]

B. Desire to grow up big and strong and to gain in weight as a sign of it.

C. Desire to be like specific ideals, such as father, mother, policeman, school nurse, scouts, etc.

SECOND GRADE

I. *Objectives*

A. Health behavior

1. The child should enter the second grade with the behavior routine so firmly established that each infringement will be a conscious one. His attitude toward proper health-behavior should be so well formed that, in case lack of home cooperation makes complete observance impossible, the attitude will persist until opportunity later on allows it to be expressed in behavior.

The work of the second grade teacher is difficult because the child is not yet able to understand any physiological reasons, but the items of behavior remain the same. The second year continues the drill begun in the first, with especial emphasis on the "hows." By the end of the second year the child's performance of this health-behavior routine should be completely automatic.

2. The next steps in conscious cooperation for health with other members of his home, school and neighborhood environment.

[6] Not deliberately used by teacher, but to be recognized as the powerful incentive which underlies all others at this age.

B. Health knowledge

All the essential "whats" and "hows" of the health program have been taught in the first grade. The second grade enlarges the child's health vocabulary, until stories can be read which include mention of all essential health habits. The words heart, lungs, stomach, bowels, and tonsils should be added to the names of the external parts of the body.

The child should know the standard weight for his age and height, his own weight and height, and should watch his gain as evidence of health growth.

II. *Methods*

A. Checking daily health record. The proper beginning of this forms a milestone in the child's development. It should be used as a lesson and demonstration of truth telling, or complete accuracy of statement.

B. Daily health inspection is included regularly but incidentally as a part of the preceding period—the checking of the health habit record.

C. Continued frequent dramatization of the daily health record.

D. Much incidental reference to health in the course of other subjects. Use of unfinished stories, conversations, dramatizations, and silent reading on health topics.

E. Reading of books[7] by the children:

Nutrition Reader, Merrill Palmer School, Detroit, Mich.
Child Health Alphabet, (Macmillan Company).
All Through the Day the Mother Goose Way, Broadhurst.
All Through the Day the Looking Glass Way, Broadhurst.
Health and Health Practices, Cuzzort and Trask.
The Sunshine School, Andress and Bragg.

F. Use of weighing to establish connection between weight and growth. Emphasizing the fact that *every* point of the health program must be observed to insure gain.

G. Educational use of milk serving period.

III. *Motivation*

A. Desire to please teacher.

[7] For full titles, names of authors, and publishers of all books used in the course of study, see p. 47.

B. Desire to grow up big and strong, and to gain weight as a sign of this.

C. Desire to be like specific ideals: parents, teacher, policeman, nurse, singer, doctor, farmer, etc.

D. Desire to be strong in order to achieve specific purposes: run an engine or aeroplane, sail a ship, go on scout hikes, play ball, raise wheat, be a cowboy, to take care of children, to nurse the sick, to dance.

E. To enjoy the feeling and appearance of cleanliness.

THIRD GRADE

I. *Objectives*

A. Health behavior

1. Continued observance of complete program of health essentials.

2. Beginning active participation in the improvement of sanitary conditions of community as well as home and school.

3. Effort to secure correction of his own physical defects.

B. Health knowledge

1. From the second grade, all the essential "whats" and "hows" of satisfactory personal health behavior, the teacher's word being accepted as sufficient authority as in the first grade.

2. The first "whys"—cleanliness, the esthetic and scientific reasons. This begins the discussion of germs.

3. Knowledge of the public health problems and machinery of the city.

4. Enlargement of vocabulary to permit the reading of health literature appropriate to the grade.

5. Knowledge of significance of weight as one evidence of healthy growth. The child knows average weight, own weight, height, and gain.

II. *Methods*

A. Daily health record checking and informal discussion.

B. Incidental daily health inspection.

C. Special featuring of the cleanliness feature of the morning health inspection with emphasis on cleanliness for the protection of others, as the basis of study of problems of sanitation.

D. Use of basic text.

E. Lessons on bacteria; read from Bigelow and Broadhurst's *Health for Every Day*. Use lens; then simple microscope; then high power. Make potato "garden."[8]

F. Practical fieldwork.

1. Visit and report of places of public health interest; city laboratory; pasteurizing plant; dairy, bakery; water works; cereal factory.

2. Report of conditions of school and neighborhood sanitation; observance of quarantine regulations; fly and mosquito control, etc. Particular stress on helping keep home and school surroundings sanitary.

G. Health stories featuring the health habits, including cleanliness, used as supplementary reading, dramatization, oral or written language work. The following, among others, are suited to this grade:

Land of Health, Hallock and Winslow.
Rosy Cheeks and Strongheart, Andress.
Story of Milk, Zirbes and Wesley (Keystone Film Co.).
Boys and Girls of Wake-up Town, Andress.
The Brownie's Health Book, Moulton.
Just Ten Minutes, Griffith.
Child's Book of the Teeth, Ferguson.
Stories from *Hygeia* and from *Children*.

H. Incidental reference to health in the course of other subjects and use of health subject matter in language and art.

III. *Motivation*

The motives appealed to in grades one and two are still active, but the important new sense of being a part of the group should be especially appealed to.

A. Personal pride and pride in home.

B. Good citizenship—not from the adolescent altruistic approach, but from the agreeable feeling of enlarged ego. The child's pleasure in feeling himself a functioning factor in city, neighborhood, school and family life is an important new motive.

C. Ambition to accomplish great deeds which only strong bodies and brains can achieve. Imitation of heroic characters of history.

[8] See p. 27.

FOURTH GRADE

I. *Objectives*

A. Behavior

1. Continued routine observance of health habit program.

2. Exertion of all possible effort to secure correction of physical defects.

3. Continued active effort toward improvement of home, school, neighborhood, and city sanitation.

4. Cooperation with family, school, and city authorities to secure safety precautions (4-B). (Already taught separately as "safety.")

5. Observance of habits of thrift, which necessarily result in improved physical condition. (Already taught as "thrift.")

B. Knowledge

1. Daily review of the "whats" and "hows" of the health habit program in the morning marking of health records.

2. Extending knowledge of the "whys" of sanitation.

3. Developing new knowledge concerning the "whys" of health behavior.

II. *Methods*

A. Marking health records to insure continued observance of complete program of health habits. All the "whats" and "hows" should be included and frequent reference made to the "whys" of cleanliness.

B. Direct instruction from basic text, supplemented by simple experiments as to reasons for observing the health habit program. The following texts are suitable for supplementary reading and furnish suggestions for experiments and illustrative material:

Health, Turner and Collins.

Healthy Living, Winslow.

Health Habits, Burkhard, Chambers and Maroney.

Continued use of *Health for Everyday*, Bigelow and Broadhurst.

C. Incidental reference to health in the course of other subjects as in preceding grades and the use of health subject matter in language and art.

D. The use of gain in weight as a measure of accomplishment.

III. *Motivation*

The incentives which apply in the previous grades are still valid. Personal and family pride and enjoyment in being a part of civic activity are strongest now. Heroic examples have a very strong appeal.

FIFTH GRADE

I. *Objectives*

A. Behavior

1. Continued observance of complete health habit program.

2. Active effort toward improvement of school, home, neighborhood and city sanitation, health and safety conditions.

3. Conscious care of the body—correction of defects—definite efforts to keep each part in condition.

B. Knowledge

1. Daily review of the "whats" and "hows" of the health record with the "whys" of sanitation.

2. Study of the gross mechanism of the human body and the way the parts work together.

3. The extending, on the basis of this study of the body, of the list of "whys" of health behavior.

4. The child's own "average weight," actual weight, height, and gain as a *sign* of success in keeping in condition.

II. *Methods*

A. Marking health records with discussion of all the "whats" and "hows" and "whys" as they are developed. By the end of 5-A a working stock of "whys" should have been developed.

B. Direct instruction by teacher in gross anatomy and physiology of body. Pig or sheep viscera should be shown, preceded, perhaps, by a chicken or other common food animal.[9] (Teachers' references—some good general texts such as Stiles', Burton-Opitz' or Williams' physiologies).

C. Direct instruction from basic text as to hygiene of the mechanism just discovered. Texts furnished for use with children are *Health Habits*, Book II, Burkhart, Chambers

[9] See p. 32.

and Maroney; *Health for Everyday*, Bigelow and Broadhurst; *Healthy Living*, Winslow; *Health and Success*, Andress and Evans; *Health*, Turner and Collins. Particularly valuable on milk is *The Path of Gopatis*, Carruthers (with suggestions for use by Mabel C. Bragg). For study of cereals, use *Hob o' the Mill*, Hallock and Abbott. *Hygeia* should be regularly reported and health items from current periodicals discussed.

D. Study of methods and opportunities for application of standards of sanitation to home, school, and community life.

E. Weight as one measure of accomplishment in health behavior—weight in turn being used as the introduction to the study of the record of the school physician's examinations.

F. Study of the school physical examination records. The significance of the findings and the pupils' responsibility in maintaining or improving the conditions recorded.

G. Incidental reference to health in the course of other subjects.

III. *Motivation*

A. All preceding ones still in force.

B. Desire to imitate heroic figures of history stronger than in third or fourth grades.

C. Personal and family pride and consciousness of self as a part of community life still more to be reckoned with. The child likes to help "fix" things; likes to set a good example for elders. Desire to be fit so as to carry one's own end of team work.

SIXTH GRADE

I. *Objectives*

A. Health behavior

1. Continued observance of complete health habit program.

2. Active effort toward improvement of school, home, neighborhood and city sanitation and health conditions.

3. Conscious care of body; definite effort to keep each part in condition, as begun in the fifth grade, continued and increased.

B. Health knowledge

1. Constant review, in connection with the marking of the daily health record and the morning health inspection, of the "whats," "hows," and "whys" of the essentials of a satisfactory health behavior program.

2. Review of the gross structure of the body and the chief functions of each part. Particular stress placed on the interdependence of the parts as necessitating a carrying out of the complete health program.

3. Enlargement, on the basis of this further study of the physiology of the human body, of the list of "whys" of health behavior.

4. The pupil should know his physical condition as indicated (1) on the school health records which give the results of the school physician's examinations of consecutive years; and (2) by his gain in weight.

5. The rudiments of first aid.

II. *Methods*

A. Marking health records continued, with constant personal application of the information being acquired as to the "hows" and "whys" of the health habits.

B. Review from basic text and supplementary texts of the gross structure and functions of the body, special stress being placed upon the interdependence of the parts as reason for the complete observance of all items of the health program. It is essential that this review of structure be illustrated from a model trunk or good manikin. Texts used: Book II, Part II, of *Health Habits*, Burkhard, Chambers and Maroney; *Healthy Living*, Winslow; *Health for Everyday*, Bigelow and Broadhurst; *Health*, Turner and Collins; *Health and Good Citizenship*, Andress and Evans; current articles in *Hygeia*, *Children*, *Literary Digest* and other magazines.

C. Study of methods and opportunities for the application of standards of sanitation to home, school and community life. Study and discussion of national problems involving principles of sanitation and public health.

D. Use of physician's examination as source of information and advice regarding personal health problems.

E. Use of weight as one measure of accomplishment in health behavior.

F. Instruction and practice in simple first aid practice from the Red Cross manual and the Scout manual.

III. *Motivation*

All preceding motives are still more or less in force. The major appeal should be made to ideals of sportmanship and citizenship.

Health Teaching Today

At the end of a year's trial of the course of study the working basis which the rationalization of health behavior seems to have assumed is this: textbook instruction in the essentials of health behavior, from a modern text, takes the place of the catechismal short-cuts which were used in the initial propaganda stage of the demonstration. This is supplemented by field trips and discussion of the essentials of public sanitation, and by the use of a manikin and a dissected food animal to illuminate the study of the human body. The child's own health experience, as recorded in the group of classroom routines which have already been listed, amounts to laboratory demonstration of the principles derived from the textbook. Elementary hygiene has thus become a natural science taught like other natural sciences through a combination of text, field work, and laboratory.

Health interest has been so thoroughly assimilated that every day's program in the classroom is full of incidental health references. With the exception of ten minutes in the morning when the health habit records are marked and the informal health inspection is made, and the regular hygiene period, all the work in health is incidental.

Returning for a visit to the Fargo schools in 1927, the demonstration director of health education questioned the principal in a typical school about her health work. The modest reply was that not much was being done; the routine

was being carried out and the textbook periods used as with other subjects. When the rooms were visited, there were clear indications that the teachers' interest was greater and steadier even than in previous years. But, the principal explained, "We just do it by incidental reference—very informally—we hardly know when it occurs." To clinch the meaning of these "incidental references" the teachers were asked to jot down at the end of some single day all the occurrences of this sort that they could recall. A representative day in each grade is quoted:

Principal

Post milk order for next day, star two highest rooms. Milk graph showing milk orders for a week. Make graphs showing red, white, and blue cards in comparison with those of whole city. Similar graphs of each room in school. Baseball and kickball games supervised at noon and in the morning. Put up poster—"They don't Grow this Way on Lollipops." Tardy pupil—ask about bedtime, amount of breakfast, etc. Sixth grade pupils published health paper and brought copy to the office. Milk served at valentine parties. Safety work stressed—keep out of streets when playing marbles. Talk with nurse concerning absentees. Return nurses' slips to teachers. Milk money checked and sent to high school. Dental examination notices given out. Talk about teeth in all rooms. Notice to janitor to clean stairs more carefully.

Kindergarten

Asked Ruth to take her fingers out of her mouth. Counted clean handkerchiefs—all but two had clean ones. All but three went to bed right after supper. Six boys and girls had brushed their teeth. Had to ask Ruth to take her fingers out of her mouth again. Talked about why we shouldn't put things in our mouth. Adjusted shades. Talked with the nurse. Sent home one girl who had symptoms of chicken pox. Served milk. Talked about vegetables that are good for us—carrots, cabbage, peas, beans, and spinach. Toilet period. Rested 7 minutes. Told about Peter Rabbit and some suggested he must have been healthy because he ate vegetables.

Grade 1B

Health inspection, use handkerchiefs. Colds, coughing, use handkerchiefs. How many brushed teeth? Who had a good breakfast? Still some coffee—what is better? Finger nails not clean. Some children wash hands. Toilet periods. Serving milk tickets, money. Music, sing "Out-of-doors." Read health book. Open windows, shades adjusted. Clean boards and trays. Look at thermometer—shut off radiator. Reading—"The Little Red Hen." Bread—kind. Reading riddles—apples. Playing games, rest periods.

Grades 1A and 2B

Health inspection A. M., clean hands, handkerchiefs, clean finger nails, time of going to bed, windows open. Game for the day: trying to keep fingers and pencils out of the mouth. Sat up with straight backs while reading. Had milk. Rested between classes once in A. M. and once in P. M. Played the snail game. Inspected hands and nails. Clean handkerchiefs. Nearly all in the room have school milk once a day. Adjusted window shades according to light conditions. Told story of The Pig Brother.

Grade 3

Noticed children usually look cleaner on Monday morning—clothes and hair especially. Marked health records. Reminded class to sit in the healthful position while writing. One boy forgot to remove sweater. Another sent out to wipe shoes. One told that another had been standing in water before bell rang. Two outdoor recesses. Took good deep breaths before passing in. One girl sitting on right foot—boy said her leg would grow crooked. Class positions became better at mention of it. Milk in morning and afternoon. One girl told us her mother had a parsley root growing in a flower pot. They had had parsley in their soup. One child brought Dr. Kilbourne's Sunday *Fargo Forum* article to attention. Wanted to know how milk could carry disease. Explained. Noticed during exercise (physical education) one boy could not sit on heels. Decided clothing was too tight. Made mental note to say something about tight clothing.

Grades 3A—4B

Check health records. Inspection. Talk on cleanliness, posture. Adjusting of shades. Health lesson. Observation of temperature. Children who wish to talk with the nurse do so

in the forenoon. Milk order in forenoon, fifteen bottles, afternoon six bottles. Milk is served at 10:20 morning and at 2:30 in the afternoon. Children pass to the basement, go to the toilet and get a drink. Children go out to play. Boards and chalk trays cleaned after school. The children were weighed Monday afternoon, and the weight reports are being made now. Recorded number of red, white, and blue cards on school records, also number of children making no gain.[10]

Grades 4A—5B

The fact was emphasized in language and history classes that Washington and Lincoln lived much out-of-doors [February 23, 1927] and took part in athletic sports. The children marked health charts. Showed their clean handkerchiefs. Two children sent in to the nurse on account of colds. Had blackboards and chalk rails cleaned. Twenty-three milk drinkers today. Children tried to sit in proper position for study. The temperature was normal—68–70°. Had curtains as high as possible to let in the light.

Grades 5A–6B

Health lesson from *Health Habits*, Book II, Part II, on how to prevent colds; outdoor and indoor air, and ventilation. Milk order taken and sent to office. Urged children to drink more milk. Shades adjusted. Milk served—some of children eat crackers with milk. Temperature noted. Children told why temperature should be kept at about 70° F. Outdoor recesses. Children speak about deep breathing. Two toilet periods and children get drinks. Weight reports made out. Weight reports given out. Robert sent to nurse for earache. Lena sent to the dentist. Room dusted, desks washed. Pupils getting up a newspaper on health. Large anatomical model of body sent to room by principal. This will be studied. Health records checked. Children told to stay out of water. Recorded number of red, white, and blue cards on school record, also number making no gains. Discussed uses of anatomical chart with other teachers. Discussed accident and home conditions of child hurt in accident.

Grade 6A

Checking health charts. Ten minutes talk on health in relation to cleanliness. Adjusting shades. Opening windows. Pos-

[10] White cards are used, but the nomenclature persists. The weights are underlined with red or blue pencil.

ture. Serving milk. Weighing. Cleaned boards and chalk trays. Neat floors—desks. Play at recess. Recorded number of red, white, and blue cards on school report, also number not gaining. Sent boys to deliver milk to the rooms morning and afternoon.

Such details may seem trivial, but they measure the degree to which health objectives have saturated the school day. It is only when health teaching reaches this stage that it is safe.

The fact that all items of the six-sided routine[11] were being rigidly adhered to had carried the program through the thick-and-thin of a readjustment involving the opening of two new buildings and the platoonizing of several more, with an attendant shifting of principals and teachers. Had one of the six interlocking elements been omitted the wheels would not have been found thus quietly turning through this reconstruction period. In every classroom of every elementary public school every one of these six items were being carried out at the time of this one-year-after visit.

This meant, it may be hoped, that there had been achieved something of the nature of a formula. So long as the keystone of the routine is kept in place the structure can not fall—this keystone being the informal case study of the individual child. This is true because the premise underlying the whole plan is true: the teacher is fundamentally interested in the well-being of her pupils. So long as the individual focus which the case study achieves is preserved the program can not fail.

REFERENCE LIST OF BOOKS USED IN THE COURSE OF STUDY[12]

American National Red Cross, *Red Cross Manual: Teachers Handbook of First Aid Instruction* (Philadelphia: P. Blakiston's Son & Co., 1922).

[11] As recapitulated on page 4. A more detailed consideration is found in Part III of the Fargo report.

[12] This list includes only the books to be placed in the hands of the pupils. It does not include the reference library supplied the teachers for their own use.

Andress, James Mace, *The Boys and Girls of Wake-up Town* (Boston: Ginn & Co., 1924).

Andress, James Mace and Bragg, Mabel C., *The Sunshine School* (Boston: Ginn & Co., 1928).

Andress, James Mace and Evans, W. A., *Health and Good Citizenship* (Boston: Ginn & Co., 1925).

Andress, James Mace and Evans, W. A., *Health and Success* (Boston: Ginn & Co., 1925).

Andress, James Mace and Andress, Annie Turner, *The Story of Rosy Cheeks and Strong Heart* (2nd ed., New York: Macmillan Company, 1922).

Bigelow, Maurice A. and Broadhurst, Jean, *Health for Every Day* (New York: Silver, Burdett & Co., 1927).

Boy Scouts of America, *Official Handbook for Boys* (36th ed., New York: Boy Scouts of America, 1927).

Broadhurst, Jean, *All Through the Day the Looking Glass Way* (Philadelphia: J. B. Lippincott Company, 1926).

Broadhurst, Jean, *All Through the Day the Mother Goose Way* (Philadelphia: J. B. Lippincott Company, 1921).

Burkhard, William E., Chambers, R. L. and Maroney, F. W., *Health Habits by Practice* (Chicago and New York: Lyons and Carnahan, 1926).

Carruthers, Zilpha, *The Path of Gopatis* (Chicago: National Dairy Council, 1926).

Children (New York: The Parents Publishing Association, Inc.).

Cuzzort, Belva and Trask, John W., *Health and Health Practices* (Boston: D. C. Heath & Co., 1923).

Ferguson, Harrison Wader, *A Child's Book of the Teeth* (Yonkers-on-Hudson, New York: World Book Company, 1918).

Griffith, Elinor Glendower, *Just Ten Minutes* (Atlanta, Ga.: Smith, Hammond & Co., 1926).

Hallock, Grace Taber and Abbot, J. W., *Hob o' the Mill* (Chicago: Quaker Oats Company; School Health Service, 1927).

Hallock, Grace Taber and Winslow, C.-E. A., *The Land of Health* (New York and Chicago: Charles E. Merrill Company, 1922).

Hygeia (Chicago: The American Medical Association).

Literary Digest (New York: Funk & Wagnalls Company).

Merrill-Palmer School, *Nutrition Reader* (Detroit: Merrill-Palmer School, 1921).

Moulton, Nathalie Forbes, *The Brownie's Health Book* (Boston: Little, Brown & Co., 1925).

Peterson, Mrs. Frederick, *Child Health Alphabet* (9th ed., New York: Macmillan Company, 1922).

Turner, Clair Elsmere and Collins, Georgie B., *Health* (Boston: D. C. Heath & Co., 1924).

Winslow, C.-E. A., *Healthy Living* (New York: Charles E. Merrill Company, 1927).

Zirbes, Laura and Wesley, M. J., *The Story of Milk* (Meadville, Pa.: Keystone View Company, Education Department).

CHAPTER III

CORRELATION: LINKING HEALTH WITH OTHER SUBJECTS

IN the good time coming when all partitions between subjects of instruction in the elementary grades are broken down, we shall not speak of teaching by correlation. The word is a frank recognition that the curriculum is pigeon-holed. But under present conditions any discussion as to the desirability or undesirability of correlation as a method of health teaching is beside the point. Only a dead subject—one unrelated to the child's current life interests—will stay pigeon-holed. Hygiene (out of a textbook) will stay. Health will not: it bulges, percolates, diffuses. Direct instruction at 9:10 A. M. becomes correlation at 9:20 A. M.—or dies. If it touches the child at all, it touches his own growth, his own food, his most intimate daily acts, a thousand live points of experience—every one intrinsically interesting to him. Develop interest in health teaching? Nonsense! The interest is there, bursting into activity when the connection is plugged in. But it must be accepted and used to the limit, or it must be abandoned. One cannot turn it on and off by schedule.

So when health teaching was systematically introduced into the classrooms of Fargo there was an outburst of correlations with all sorts of subjects—related and unrelated to health. Their profusion was disconcerting—until one realized that this was the natural result of the first exposure of most of the other subjects of instruction to a vital life interest,—the focus of community effort.

In the earliest stage of the demonstration correlation was consciously striven for as an aid to health propaganda and a means of drill. As has already been said, correlations always followed direct instruction: the health fact was taught first as a fact in its own right, and then "correlated." References to health were made in connection with the teaching of other subject matter so that the health precepts might more quickly take on the color of axioms, always and everywhere applicable. Very soon, however, the techniques of expression assumed their true function; they began to serve the existing interest of children in their own health and thus to intensify it. The incidental references to health soon came spontaneously from the children. Correlation was thus a give and take: other subjects helped to drive home health facts; health consciousness in turn vitalized other subjects. Now the pendulum has a normal swing, and only such cross references as are genuinely pertinent to both subjects are made by the teachers.

During the first year of the demonstration no attempt was made to regulate the use of correlation, except that parodies of classic, religious or patriotic literature, art or music were flatly prohibited. At the beginning of the second year some critical study of correlation by the teachers was invited. A collection of the work submitted by twenty-two other cities in a teachers' scholarship contest sponsored by the American Child Health Association was posted in the high school auditorium for examination and was later kept available at the demonstration office for more careful study. The supervisor offered the following touch-stones for evaluating these correlations and devices:

1. Is it necessary? That is, can you in some other way convey the same information or develop the same habit more simply and directly?

2. Is it organically a unit? That is, if it is a correlation, are the two subjects concerned mutually benefitted by the lesson? Health lessons should never be dragged in to point a moral.

3. Is the vehicle selected for carrying the health information a good vehicle? That is, is it good art, good arithmetic, good literature, etc.?

4. Is it a parody or adaptation of some classical or well-known poem, song or story?

5. If it is a device, plainly intended for temporary stimulation of interest, is it sufficiently interesting to promise success?

6. Is the health information which is conveyed sound?

7. Is it limited to essentials?

8. Is the method pedagogically sound?

In this second year one problem pressed for decision. In discussing correlation with the teachers the supervisor had taken the stand that art forms are legitimate media of expression of health experience when that experience has an emotional color. But here the children taught the teacher and the teacher the supervisor. Cleaning the teeth or the finger nails, and even more intimate acts, appeared in the children's posters, songs and rhymes as simply and sincerely as the conventional topics—sunshine, fruit, fresh

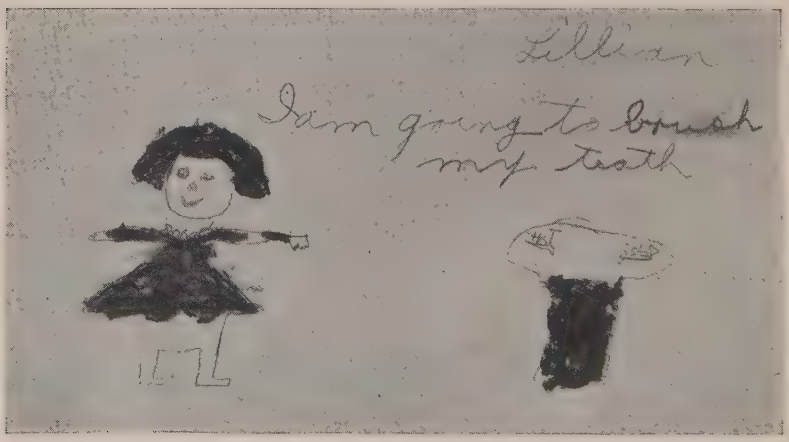

FIGURE 5. An animated expression of an unmistakable and praiseworthy purpose!

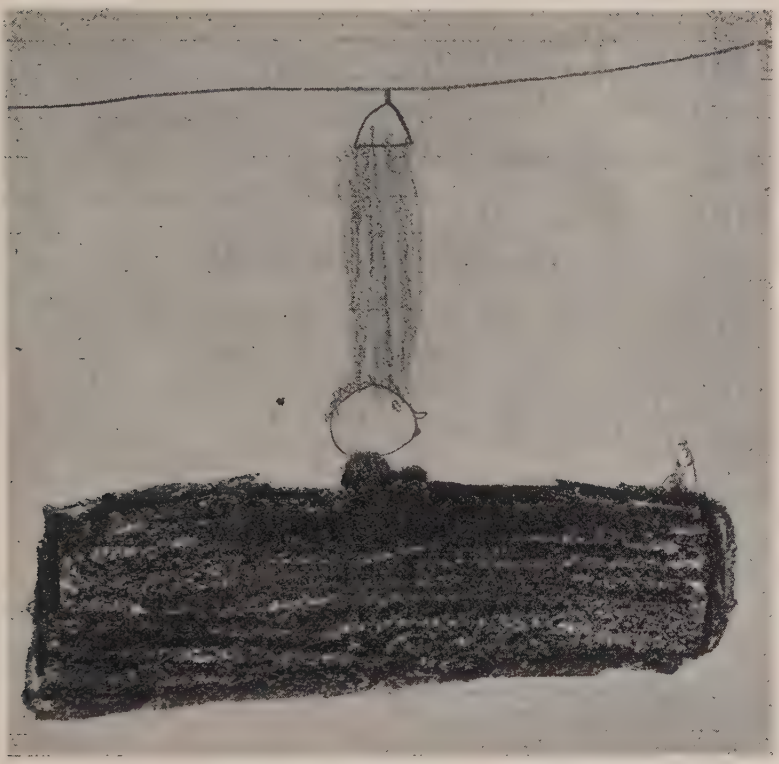

FIGURE 6. The all-over bath makes its début in Fargo "art."

air, sleep, and play (*Figures 5 and 6*). The teachers had taught the importance and unity of the program as a whole so successfully that the children drew no line between the esthetic and the unesthetic; all of the things they did were part of health and all were done eagerly. The children won, and made their poems and their posters as they pleased. We could not very well teach them songs or rhymes that seemed inappropriate to us, and since the poets, musicians and artists are still bound by our common conventions there was no difficulty in maintaining consistency from the teacher's side. But if the children had progressed so far

beyond our acquired inhibitions as to see all natural functioning as equally interesting, so much the better. Our categories of suitable and unsuitable correlations were relaxed as the children taught us wisdom.

Another question called for early decision. When health teaching was correlated with other subjects or with the techniques of expression, what was the health supervisor's responsibility with respect to the soundness of the other subject? There were three alternatives: to eliminate all reference to health in other subject matter, for fear of the taint of inaccuracy—a manifest absurdity; to attempt to supervise all the instruction where health and other subjects went hand in hand—a manifest impossibility; or to be content with the soundness of the health fact even when it appeared in an obsolete or spurious setting—when, for example, an earnest teacher drew a false analogy between the growth of green plants and white children, or extolled Lincoln as an example of physical perfection because he lived out-of-doors as a boy. Obviously the third alternative had to be adopted. Health information must be sound, but we cannot wait till we are omniscient to impart it. When health has taken its rightful place as a major objective of education, and the children are aroused to work for it, one must choose between leaving health interest free to express itself where and as it will, and stifling it by too rigid limitation of time and method. Health references will inevitably overflow into other subjects whether they are well or badly taught. In Fargo, therefore, the supervisor made every effort to safeguard the accuracy of health teaching, but kept her hands off other subjects when they were correlated with it. Indeed, her ambitions reached no higher than the hope of seeing the new "health" absorbed into the level of the splendid work being done in the established subjects.

The Project

The more completely correlations are developed, no matter what focus of interest they may have, the more nearly does correlation disappear in the project. Correlation implies, as we have said, the division of teaching into "subjects," but it also implies the possibility of breaking down the walls between them. In the project these walls disappear altogether, and we have instead the coordination of all activities of the classroom in a self-directed, unified, purposeful undertaking.

The complete project is possible in the public schools only in the primary grades, where subject matter has not been irrevocably pigeon-holed. In the platoon schools it is practically impossible in grades above the second, though the project spirit is well served by the platoon system and many of the best examples of coordinated interest involving health teaching were met in the platoon schools in Fargo. The projects which are reported in the following pages, it is worth noting, are not "health projects" so much as inclusive enterprises which, because they touch the children's daily living, necessarily involve health references. Some of the best were developed before the health program took form in the Fargo schools, and only their perspective has changed as they have been assimilated into it. Not all teachers used such projects, but all health teaching was to some degree felt to be an element in the larger project in which all Fargo was engaged—the development of a self-directed community health program.

The cereal project worked out in one first-grade room is a good example of the project in its more technical sense (*Figure 7*). This group visited a Fargo mill where a favorite whole wheat breakfast food is made. The observations

FIGURE 7. First-grade children keenly enjoyed the actual preparation of cereals and a definite growth in health knowledge seemed to be the result.

made at the visit were recalled wherever pertinent in the course of the project. The outline as given by the teacher follows:

CEREAL MADE FROM WHEAT

I. The raising of wheat.

1. Discussion. Preparation of the ground; plowing; cultivating; sowing of the grain; rain; sun; harvesting.

2. Activity. Each child planted several kernels of wheat in a pot, watered them and placed them in the sun.

3. Developing the following reading lesson after the work had been done.

(*1A*) Miss Stevenson gave us some wheat.
We planted it in a pot of dirt.
We covered the seed with dirt.

Then we put the pot in the window.
Each day we are going to water it.

(*1B*) Miss Stevenson said, "Let us play I am the Little Red Hen."
"Who will help me plant the wheat?"
Woodrow said, "Not I."
Lillian said, "I will."
Arthur would not plant the wheat.
Helen said she would help me and she did.

4. Finger Play, "The Little Plant" by Kate Brown.[1]
5. Poems to learn, "The Rain" by R. L. Stevenson.
6. The songs used for the day were:
   The Rain[2]
   Raindrops
   Storm and Sunshine (*second verse*)

II. The making of cereal.

1. Discussion of the making of cereal, and the grinding of wheat, including methods of grinding: windmill, water power, engine-coal (used in Fargo mill which we visited.)
   1. Kinds of cereals—prepared and cooked.
   2. What makes a good wholesome wheat cereal?
   3. Necessity of supplementing white cereals with more fruits and vegetables.

2. Activity: the whole wheat grains were ground in a coffee mill by the children in turn to the accompaniment of the following rhyme recited in unison by the class:

   We push you, wheel,
   To help you turn.
   To grind the flour and meal,
   Merrily, merrily over so
   Faster and faster you go.

3. Reading sentences were developed as follows:
   Miss Stevenson cleaned and washed the wheat.
   We put the sheaf in the hopper.
   Each of us helped turn the mill.
   When the wheat came out it was cereal.

4. The following poem was read and learned:
   The farmer must plant and the miller must grind,

[1] Emilie Poulsson, *Finger Plays for Nursery and Kindergarten.*
[2] Hollis E. Dann, *First Year Music*, pp. 81, 82.

Or there wouldn't be bread of any kind.
For how could the grocer get it to sell?
Flour and meal, I cannot tell.
And how would the mother get it to bake?
How would she ever make bread and cake?
Yes, the farmer must plant and the miller must grind,
Or there wouldn't be bread of any kind.

5. The song for the day was "The Mill."[3]
6. Plays and games:
"The Miller Boy" by Marie Hofer[4] was an appropriate game.

III. Cooking the cereal.

1. Discussion. Value of cooked cereals above prepared ones and proper cooking.

2. Activity. Cooking our cereal. Recipe, take one cup of cereal to three cups of water, add salt and boil in a double boiler three hours.

3. Reading. The following sentences were developed and read:
We cooked our cereal in a double boiler.
There was water in the bottom.
We put water, cereal and salt in the top.
We cooked the cereal three hours.

4. Number work. Figuring the amount of water needed, measuring the water and cereal.

IV. Our Party.

The serving and eating of our cereal is told in the reading sentences developed. They do not, however, in any way do justice to the really great educational value which this party possessed. Under the skilful suggestions of the teacher all essential points of etiquette were observed, with the happiest informality.

Reading:
Miss Brown and two doctors came to our party.
James and Max passed the napkins.
Betty dished the cereal.
Merle put milk on it and Henrietta put on the sugar.

[3] Hollis Dann, *op. cit.*, p. 80.
[4] Marie Ruef Hofer, *Children's Singing Games.*

Vera, Fern and Howard passed it.
We all liked it very well.
Donald took the dishes after we finished.
Paul helped, too.

The following is a second-grade teacher's own account of a real project:

OUR TOMATOES

In speaking of the vegetables in connection with our spring work we decided that we would like to have a seed catalog, so we had to write a letter. The pupils dictated the letter and I wrote it on the board and they copied it. I selected one to be sent and they mailed it.

The next day one of the boys came and asked if his mother could have the address as she would like to send for a catalog. So I put the address of six seed houses on the board and told them that they could copy one and take the name home and just write a one-cent postal and then they could each have one. I thought this was a good idea as then the parents might send for some seeds and have a garden. More than two-thirds of the class sent for catalogs. One boy asked what company was nearest as he wanted to get his as soon as possible. I was not quite sure so we got a time table and looked and one place was two hundred miles and the other was two hundred and fifty miles so he sent to the town that was two hundred miles, "as that isn't so far," he said.

They soon got their catalogs and brought them to school and we began looking them over to see what kind of seeds we would send for. This served for a number of reading lessons and it was surprising how well they got the words. They used the blanks and filled out the order, putting in the price of each item, and then we added to find out the cost of our seeds.

We had had a great deal of work on the value of vegetables in our health work and it had been explained that the tomato had the same value as the orange, so we had included tomato seeds in our list. I asked them if they knew how tomatoes were planted and one girl said that they always bought plants. This suggested the idea that we plant tomato seeds and raise our own plants.

In our work on bulb planting we had spoken of soil, so I asked them each to bring an egg shell filled with good soil. We spoke of the need of having a hole in the egg shell so that the water would drain through. The egg shells were brought and we planted four or five seeds in each. We placed the egg shells in boxes that were

filled half full of soil so the shells would not break and it was easier to water them. Each box contained twelve egg shells. They watered them well and one boy insisted on putting them in the dark to let the roots get started. I explained that this was not necessary with seeds, but as it was Friday we would set them out of the window so that they would not dry up.

The following Monday we set them in the window and we appointed a boy and a girl to water them. Each pupil had written his name on his egg shell and every morning they watched to see whose was to come up first. They decided that they would like to write about how they planted their seeds, so we made booklets and put the story and the date of planting on the first page.

Soon the plants were coming up and for our next page we drew a picture of the plants; we found that this was just eight days after they had been planted. We waited another week and then we drew another picture on the same page and dated this.

As the plants grew the children soon noticed that some were not so large as the others, so we began studying why this was. We decided that they were too crowded and that there was not enough food for so many plants, so they pulled up the weak plants and left in each shell only the two that looked healthiest. This was written up for the third page of our books. The pupils took good care of the plants and learned that they would turn toward the sun, so they had to turn the boxes every three days, so as to give all a chance to get the sun.

In about five weeks they were too large for the egg shells so we decided that we would have to transplant them. Each pupil brought a pot from home filled with soil. When the children transplanted their plants they cracked the shells and set them into the pots so as not to hurt the roots. Now the pots were set out of the bright sun for a few days. This was written up for the fourth page of our books. By the twenty-fifth of May they had some very nice plants and they took them home and planted them in their own garden. We spoke of the things made of tomatoes and I told them that if they could get them to grow we might make something out of them in the fall.

Miss Harris, our health worker,[5] was very much interested in our project and asked me to give a demonstration lesson in the fall at our institute. We sent notes to the pupils and asked them to come to the School the day before and most of them came. The

[5] Temporary director of health education, April–September, 1923.

first thing that they told me about was their tomatoes so we had enough for our demonstration. In our demonstration lesson they told how they had planted and taken care of the tomatoes and why we had selected the tomato. Then we had a silent reading lesson on how to peel and slice the tomato and how to set the table. We had a table on the stage and the pupils set it and when it was ready they sat down to a lunch of tomatoes, graham crackers and milk.

After school had been in session about three weeks we decided that we would make something out of our tomatoes. Three of the girls brought recipes from home. One of our daily newspapers has recipes in it and one of the girls brought a recipe that had been in the paper. The girls read their recipes and the pupils voted on which they would like. The recipe from the newspaper, for tomato marmalade, came out ahead.

We began by writing the recipe on the board and decided how many times we would have to take this so as to make enough for each child to have a small glass to take home. We first measured to find out how many cups of sugar there are in one pound and then figured how many pounds we would need and the cost. Then we figured how many oranges and lemons were needed and the cost. We also decided on the amount of nuts and the cost and how many tomatoes and what they would have cost if we had had to buy them.

The following day the pupils brought their tomatoes and we went to the domestic science room and peeled them and cut them up. We then set them on to boil. We boiled them over water so that we would not have to stand and stir. We selected a committee to buy the things that we would need. The following morning we squeezed the oranges and the lemons and cut the nuts. Then we mixed all and set it over to boil again.

We then put our glasses over to sterilize them and the children were told why we did this. We tested our marmalade and when it was ready the glasses were filled and the children put paraffin on the top. The following day they wrote labels and after the glasses were washed they pasted their labels on. Each one took his glass home and we had two large ones left that we used for our party at Hallowe'en. We wrote up how we made our marmalade and about our party.

Many of the pupils who had never eaten tomatoes before learned to like them very much and many even got their folks to use them;

besides that the children had had valuable lessons in reading, oral and written language, nature study, spelling, and numbers. They had been instrumental also in interesting their folks in gardening, and learned to respect other people's gardens, so it was a lesson in citizenship as well.

In the third grade of another school the following excellently coordinated project was developed:

THE LETTUCE PARTY

It was decided in the nature study class that the children would like to plant a garden and thus see the development of seeds.

FIGURE 8. The "lettuce party" was the culmination of a third-grade project which unified classroom activities. The children planted the lettuce themselves. These "parties" so often held in the lower grades were among the most valuable methods for the reinforcement of health teaching.

They realized they must have a large box in which to plant their garden. Therefore their manual training lesson was well presented when we heard the constant tapping of hammers, "oh's" and "ah's", as little fingers were hammered, and the hilarity over painting the box. In the course of a few days the class had constructed a box three feet by four feet.

Our nature study class was conducted out in the bright sunshine while we hunted for and finally found the rich black soil, which is so productive in North Dakota. We observed the little lettuce seed and with due ceremony planted it. Another small box contained seeds which were of high grade, but deposited in a place where no sunshine touched them.

Day by day we watched the development of the seeds, and the children soon made the statement, in our health class, that we must be just like those little seeds. The seeds in the big box which were given water and sunshine were growing, while those in the small box which had neither water nor sunlight were shriveling and dying.[6]

In a few weeks the children were delighted to see big green lettuce leaves. I suggested that we churn butter and have a lettuce party. Churning butter, to city children, is a novelty long to be remembered.

I procured a real old-fashioned wooden churn and two quarts of cream. Each child had the privilege of churning and all of them went into ecstasies when they saw the little balls of butter forming. After they had a big ball of butter, they tasted it and found it was not salty. This was soon remedied.

A loaf of bread was furnished, and the children proceeded to pick the lettuce and wash it.

Arithmetic was involved when the class decided that we would need three leaves of lettuce for each person. Thirty-two children, we found, would make it necessary to prepare ninety-six leaves.

The children had learned through a lesson on table etiquette that we must have napkins. Each child was supplied with a piece of white wrapping paper and decorated his napkin in bright crayola designs. Our cleanliness lesson was introduced by a sojourn in the wash room where we prepared to come to the feast.

Bread and butter and lettuce sandwiches were made, and, from the paper cups the children were taught to make, we all sipped buttermilk. Dairying was discussed at this point and many pictures gave us city folks a working knowledge of the care of cows and the task of handling milk in a clean way.

After our lunch, we used our spelling period in learning words we had used in our project. The children suggested the words they wished to know how to spell, and a list consisting of forty-three words was presented.

[6] See p. 104.

The language period was most interesting. We wrote letters to our friends in a school in Texas, telling them of the project we had just completed. Letter writing is interesting to third-grade pupils when they have something of interest to write about and know that people will really receive the letters. Of course our penmanship lesson consisted of writing certain parts of our letter over and over, until we were satisfied with the result.

The reading of some of the best letters supplied a real human reading lesson.

One of the most effective cooperative enterprises was the effort of every department of the schools to induce every child to grow a garden. Most of the children did so, with obvious advantage to the green vegetable planks in the health platform. Often plans of the garden were worked out and compositions written in school to record the gardener's success. Every spring the intermediate classes in their art periods designed, and cut out with scroll saws, garden markers for their own vegetable patches.

Language

So well taught is language in the primary grades in Fargo that the techniques of expression develop together as part of a unit experience. The children dramatize, talk about, draw, read, and write whatever they are interested in. The symbols of printed and written language are put before them while they are discussing their walk in the park, or what they had for breakfast. The paragraph written on the board as they talk is gradually broken up into sentences, phrases and words; finally the words are phonetically analyzed, and then spelled.

To the laity, the rapidity with which reading ability is acquired in these rooms seems miraculous. But expression cannot reach beyond experience. The child's own daily life is the most intimate and most interesting experience he

has. Health subject matter is therefore used eagerly by both teacher and pupil once the gates are opened. In many school systems this is too often the only topic of classroom discussion that ties up with the child's own life.

A rough study, made after the third year of health instruction, showed that by the end of the first year in school the child's spoken vocabulary contained all the words essential to health reference and that by the end of the second year his recognition vocabulary enabled him to read any ordinary paragraph dealing with health behavior—including the names of foods, of the external parts of the body, and of the heart, lungs, stomach, and bowels. During the third year his written vocabulary caught up. So many words with health significance are heard in the classroom that the casual visitor might think that health had artificially been dragged in; the fact is rather that words relating to the child's daily life are, to an astonishing degree, absent from the common vocabularies and readers.

The projects already cited (pp. 56–63) are sufficient example of the way in which the media of expression are used to reinforce one another in a natural way. An enumeration, with little or no discussion, of various uses of health subject matter in oral and written language may indicate the readiness with which health assumed its normal place in the life of these children.

Dramatization

Dramatization is the most valuable vehicle for the expression (and consequent growth) of interest in the health program.

Pantomime. Because the essential facts were few, and because they must be built quickly into habit patterns, much drill by pantomime representation was used at first. This

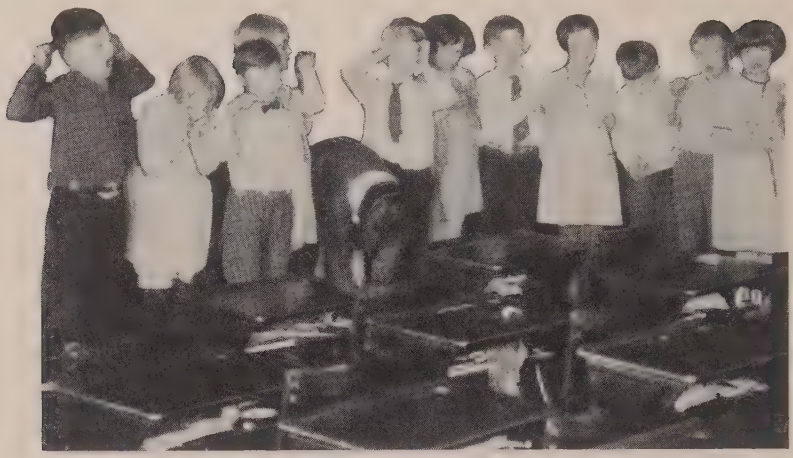

FIGURE 9. After having pantomimed the items of the daily health-behavior program these second-graders tried out a consecutive arrangement and liked the "movie"

began with the daily health program as a whole so that no act could be thought of as isolated. The natural sequence of the day's activities was preserved in drill, and all possible use was made of the actual motions used in real performance, the sooner to habituate the neuro-muscular mechanism to its new program. The drill was varied as much as possible to prevent loss of interest before the performance became securely fixed in memory.

For younger pupils slight variations such as these were used in different classrooms: pantomime of the daily health performances in unison, beginning with getting up; pantomime by children in sequence, like a "movie" (*Figure 9*); pantomime by one child alone, acting out the program until he makes a mistake and another takes his place; one child acting one item of the program and designating another to select the corresponding phrase card (*Figure 10*); the same process reversed, one child holding up a card and calling another to act it out; acting out ready-made rhymes

effect. The persistence with which the evening prayer was added to the health routine may indicate another case of wisdom "out of the mouths of babes."

(not a good method, but occasionally used); pantomime by sections of the program, getting ready for school, what we do at noon, getting ready for bed, etc.

After the first two years it was not necessary to go above the second grade with any of this performance drill. The habit of thinking of the items in sequence as a narrative was fixed. In the beginning it was a difficult problem to keep the presentation so continuous that new habits superseded old ones, without wearying the older pupils. It does not do to admit, with them, that the drill is merely for memory's sake. More entertaining schemes of presentation, variously motivated, were therefore used. In one fifth-grade room, for example, a shadow pantomime of the health habit program was worked out and varied in different ways until the whole program could be quickly and recognizably performed. The children then selected the best performers to give the show before the Parent-Teacher Association. In another room original health rhymes or stories were

FIGURE 10. These second-graders are using, in one of a score of possible ways, the silent reading sentences which review the daily health procedure. One child acts out the meaning of a sentence and another selects the card that corresponds to the action.

read aloud and acted in shadow as read. After the technique of sheet and light had been worked out by volunteers after school, this particular room needed no other plan of presentation for the rest of the year. In one room a discussion as to the characteristics of good pantomime was carried on, and leading motion picture actors were intelligently criticised.

Still another use of original pantomime was developed by a natural dancing class in one of the junior high schools, under the leadership of the physical education teacher,

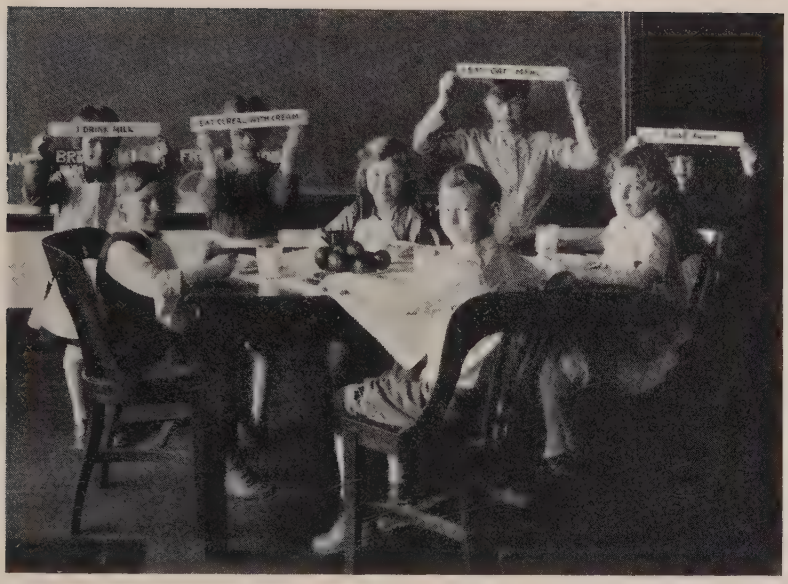

FIGURE 11. Another use of dramatization combined with silent reading drill, also in the second grade.

and presented at the May Day program. It is printed here in the hope of tempting other teachers to work out equally simple and pleasing experiments.

A HEALTH STORY

(*Accompanying music indicated in Italics*)

Sibelius, Valse Triste—The Bad Health Jester goes out into the forest in search of prey. The law is such that when mortals gather around him, one must pay the toll of ill health. He dances about, with stunts and capers, always on the look-out to avoid his enemy Good Health.

About seven mortals enter. They all admire the Jester who tries to entice them and lure them with him. After dancing about for awhile one seems to feel a spell upon her and leaves the circle. The others beg her to come back. She cannot understand her peculiar feeling, so finally consents to return. They dance again and she soon realizes the spell and leaves the circle terrified.

The others try to calm her; failing, they become frightened and leave. Madly she rushes around over the stage and then runs to the Jester and begs to be released, but it is too late. Slowly she sinks down at the Jester's feet and gives up. The Jester sneaks out, fearful lest he may be found out in his gruesome work.

Idilia—The Good Health Fairy comes dancing in and appears to realize that something is wrong. Upon seeing the mortal, she summons her attendants who are ever ready for those who will accept them. *Sleep Song*—Sleep Fairies enter and give her the much-needed rest. *Rig-a-jig*—Milk Sailors come in, giving her the most wonderfully well-balanced food of all. *Gavotte*—Vegetables dance for her to provide the necessary vitamines, minerals, and roughage. *Moskowski Waltz*—The Play Fairies come in dancing with balloons labelled to represent fresh air, sunshine, exercise, fun, etc. This last group is followed by the Spirit of

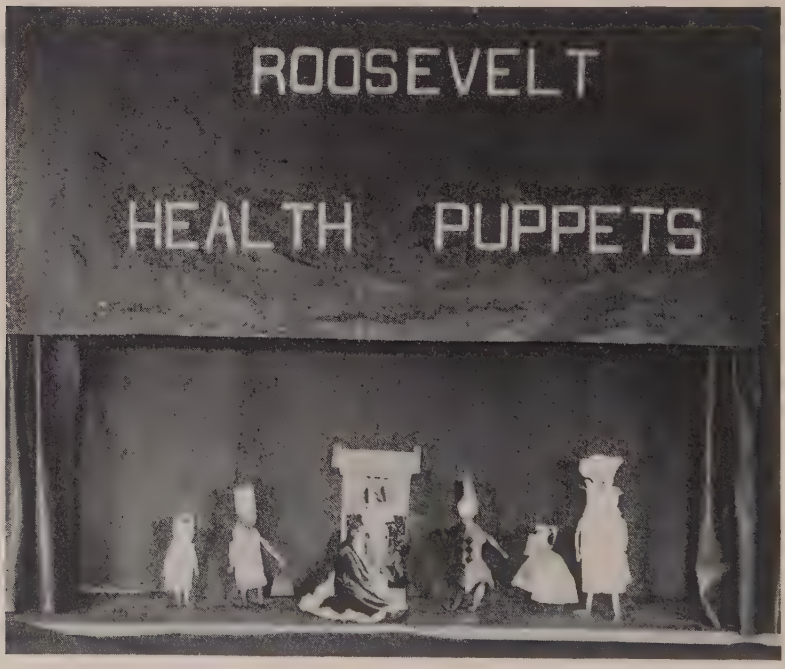

FIGURE 12. The whole program of a fifth-grade class came to focus in this excellent use of pantomime with figures and properties made in the classroom.

FIGURE 13. Making paper furniture for a first-grade playhouse which will be filled to bursting with health implications.

Outdoors, who shows that the mortal is completely revived. They all dance joyfully to the tune of *Idilia*.

Puppet show. In several schools puppet shows, the figures and the theater being made in the art class, were used to represent the routine health program and to produce original plays involving health situations. As used in one fifth-grade room (*Figure 12*) this was a genuine project which coordinated all the work of the classroom and afforded entertainment for Parents' Day. The puppets were also used in this school to illustrate a story which was read from a book.

FIGURE 14. The playhouse project is a part of the yearly first-grade program. It forms an ideal setting for health instruction and for drill.

FIGURE 15. A somewhat elaborate version of the "store" project. It legitimately involved the whole program of this second grade.

Oral dramatization. This is the most valuable for both younger and older children. In the earlier grades it was usually introduced after the more rapid sequence of the pantomime had begun to fix the routine in memory; dramatization then made it possible to elaborate the "hows" of health observance. For example, many of the teachers used the play meal to teach table etiquette as well as right choice of foods, and the whole program to reinforce the lesson of courtesy and good usage.

Since most first-grade teachers use the home life of the child as the point of departure for primary work, every possible variation of the "playing house" theme was utilized as a vehicle for health reference (*Figures 13, 14*). One favorite plan was to let groups of children representing father, mother, children and baby act out the health program in sections. Another was to designate the children, in turn, as play parents for a doll which was adopted by the whole class. The other children were always wholesomely critical of the health behavior of the actors.

"Playing store" has been used in many ways, from a spontaneous conversation with pretended properties up to a complete and elaborate project (*Figure 15*). The telephone conversation between grocer and mother, or the mother's visit to the market, gave freshness to oral English and helped to drive home an abundance of food wisdom.

All grades made frequent use of spontaneous dramatization in the form of "conversations"; these formed a very valuable part of the auditorium work of the platoon schools. The chat between neighbors is always popular; other conversations noted in the classrooms brought into play the employer and the applicant for a job, father and son, children of different countries, historical characters, doctor and patient,

FIGURE 16. Playing "health examinations"—a dramatic reinforcement of the entire program of health supervision.

the nurse and the girl who wants to be a nurse. The following is a typical telephone variation:

Time: afternoon.
Characters: DAD, in his office. JOHN, at home.

JOHN Hello, Daddy.
FATHER Hello, John. What do you want?
JOHN May I go and buy a paint-box and paint some pictures?
FATHER No, John, you must play outside today. You need the fresh air.
JOHN What shall I play, Daddy?
FATHER Play in the sand.
JOHN Oh, yes, I'll make Holland in the sand tables like we did at school. Daddy, mother says I can drink milk at school.
FATHER All right, John. How much money do you want?
JOHN A quarter, Daddy.
FATHER All right, John. When I get home I'll give you the money.
JOHN The teacher says that milk will make you grow and get fat like the Dutch twins. Is that right, Daddy?
FATHER Yes, John.
JOHN Then, Daddy, when I get big I can go out farming. When I get through farming I can come to town and be a banker.

FATHER Well, John, I'll have to stop now and don't forget to play outside.
JOHN Good-bye, Daddy.

A study of the stores of the district in relation to the city ordinances resulted in one class of fifth-graders writing original dialogues, one of which is reproduced here. The candor and enthusiasm with which the cleaner store was extolled should have brought a marked increase in its patronage.

ADVANTAGES OF THE STORE

(*Mrs. White getting ready to go down to the store. Phone rings, she turns and answers it, finds it is one of her friends*)

MRS. WHITE White's residence.
OTHER PARTY Hello, Lois, this is Julia.
MRS. WHITE Oh yes, Julia.
JULIA What are you doing?
MRS. WHITE I was just going down to the "....." store to get my groceries.
JULIA What! Do you trade at that store?
MRS. WHITE Why, of course, don't you?
JULIA (*disgusted*): No, I don't think it is clean.
MRS. WHITE Not clean! Why, it is the cleanest store in town. Just to prove it, one time I went to a different store and wanted to buy some prunes, they had them in a box, but the cover was off of the box, but at this store they had the cover on. And you take a basket and pick out the things you want, everything is clean. It is the most immaculate store in town.
JULIA I think that I will trade at that store from now on.
MRS. WHITE I hope you have good luck. Good-bye.

Interesting conversations were sometimes chosen by the children for presentation in costume before visitors.

In dramatization the performance of ready-made plays of little value save as stepping-stones, came first. When the health content was carefully checked up, these were useful in exposing parents to health information, but since there

are few such plays which combine literary merit and scientific accuracy, it is fortunate that the first year saw most of these performances supplanted by original dramatizations of stories read, and then, still better, by crude little plays made entirely by the children.

The third and fourth grades especially feel the convenience of reading the ready-made story and dramatizing it. The lower grades are more apt to begin where this should end—in original dramatic representation of real life. If the child has not been defrauded of his birthright of fairy stories and fables, imagination will start the embroidery which the subtle suggestion of the wise teacher encourages. As the child's experience enlarges, the teacher supplies more and more raw material for his active imagination to use, remembering, as so many of us are prone to forget, that the child's mental processes are restricted to his experience. For this reason, it is the best teacher who realizes that the simplest, crudest little original play out of the child's own circumscribed experience is much more worthy of mothers' day performance than the borrowed script. Much use has been made of these little plays, costumed with makeshift stuff, or with costumes as well as scenery make-believe (*Figure 17*). Reproduced, they would seem banal—but seen in the spirit of the happy performers they are infinitely worth while. If the teacher has not meddled, these plays show the characteristics of early drama—the vigor with which virtue is rewarded and the swiftness with which broken health rules are followed by an early grave; the personifications; the generic characters.

The interest of the teachers in original play-making was guided by Flora Frick (Director of Physical Education, Moorhead State Teachers College) who developed with them plans for simple pageantry. About fifty of the Fargo elemen-

FIGURE 17. Third-graders with costumes and properties for one of the original health plays which proved delightful to the performers.

tary teachers were divided into groups, each group developing an episode from a chapter of "In the Path of Gopatis."[7] Miss Frick comments as follows:

The book is in no sense dramatic. It relates a number of instances to show the universal appreciation accorded in all ages to Gopatis, god of the herds. It cites also a considerable store of statistics on dairy products, both here and abroad. At first hand, it offers nothing which would suggest a dramatic use. The class did, however, work out and present for its own pleasure a very effective pageant, based on that book. Each teacher worked on a committee which prepared some episode and most of the material was prepared in the teacher's classroom by her pupils. The members of the teachers' extension class were the only actors and the rôles enacted covered a wide range which included a cow, a covered wagon, made by three tall women and one sheet, and fictitious and historic characters from all ages. The costumes were improvised and still the whole was singularly effective. A committee had woven the thread on which the whole was strung together.

[7] Published by the National Dairy Council.

A teacher or group of teachers might work out any similar topic in this way. Water, for example, would interest every department in the school, from the history class, which would be interested to trace the rise and fall of nations with reference to their water supplies, to the science groups, which would find many interesting stories of heroism in the fight of typhoid and other diseases dependent in whole or part on the water supply. Such a topic immediately opens up vistas of possible dramatic action before the teacher and the class.

Since these schools are well-taught schools, there is little beside dramatization that can be labelled "oral language." This is, of course, the first means by which primary children express their thoughts, and comes first as the medium of communication regarding their growing stock of experiences. So soon, however, do these teachers connect the symbol with the spoken word that almost at once the child begins the use of picture and written word in connection with oral language.

Written language developed so gradually and was so intimately connected with oral expression that in the lower grades it is difficult to separate them. Health interest helped the teacher to answer that ever-present query: "What'll I write about?" Very properly, that which was given permanence by writing was first talked over. The cooperative composition, dictated by the children to the teacher, which is used so freely in all grades, was the vehicle of much health interest. Some complete projects were built on the reading of an interesting health story, which was then reviewed in a cooperative composition and often illustrated—either free hand or by cut-outs from magazines. Frequently these compositions were acted out as well and sometimes they were embodied in movies (*Figure 18*). No separate example of the "cooperative composition" need be given as it is evident in all the primary projects quoted. Splendid

FIGURE 18. A health movie and two fifth-grade showmen. The original drawings illustrate a cooperative composition and the boys made their own "projector."

use has been made of the incentive of preserving in written form the best of the spontaneous dramatizations—telephone conversations, dialogues, etc.—in booklets to be taken home or in scripts to be performed at Parent-Teacher Association meetings or "mothers' parties." An original story or a health talk worked out in hygiene or English periods was sometimes given by older pupils to younger ones. The influence of the older children upon the little folks is very great, and the process is of still greater value to the older child who thus goes on record for his health principles.

Letter writing was legitimately motivated in many ways. Real letters were sent to the health department asking for information and reporting violations; letters were written to children in other cities or other lands or to characters in stories; to classmates sick-a-bed; to dealers asking for catalogues of various commodities (used often in arithmetic). If letters were written to real people and actually sent, care was taken to be sure that this was the best way of securing needed information or material.

Health interest supplied material for newspapers in the fifth grades of several schools. The "personal" column, since it was conducted entirely by the children, supplied many a criticism of personal health behavior more vigorous or more caustic than the teacher herself could have administered. Space is lacking to reproduce an entire issue, but a few quotations from one of several "health weeklies" will suggest their flavor:

> We still have two people without tooth brushes.
>
> *Paul S.....* has quit drinking coffee. He was the last one to stop and we consider it quite a victory for him. When we first started with our health charts we had fifteen people who drank coffee but now we haven't any.
>
> *Marion K.....* had a new orange dress with blue trimmings on, Thursday.

Rudolph T..... had a clean shirt on Thursday morning, but his hands were dirty.

Max W..... has been a very poor citizen this week. He has not been able to control himself. On Thursday it was necessary to apply the law.

The Editor wishes to remind everyone that now when it stays light so long we must not forget to go to bed just as early as we did during the winter months. Long hours of rest will help us to win the Silver Health Cup.[8]

We have had no absences on account of sickness this week.

Those who have poor health be sure and have your teeth looked after for they sometimes delay your health; also brush them three times a day.

In the best journalistic tradition one of these newspapers held a symposium. The subject was "What my father does to help others to be healthy." Excerpts follow:

My father is a druggist and he helps the people keep their health by selling them medicine when they are sick, and so they will keep well after that.

My father works in a hotel, so he helps give the people a place to get eleven hours sleep and to sleep with their windows open.

My father is a dealer in used cars. He helps make people healthy by selling open cars. When the people receive these cars they go on long trips out of town and receive pure air.

My father makes things out of wood. He makes chairs so people can rest.

My father is a doctor. He keeps the people well, and when they are well they want to stay well. He tells them how to keep healthy.

And best of all!

My father digs and fixes up our water pipes, that helps us to get clean water.

The older grades find a rich source of material for advanced composition in the ramifications of the health interest. For training in reference work, reports from library and encyclopedia research were made more interesting by

[8] See p. 129.

the vital importance of health topics. And the inevitable cross word puzzle employing health words appeared literally by the hundreds. Much gain in exactness of health information resulted from the making of these puzzles. Original health rhymes, limericks, acrostics, and riddles have all enlivened the written English work.

With her sixth-grade pupils, one teacher made two successful applications of health interest in written expression. One was the preparation of a "Who's Who in Health," an old idea in a constructive and original form. Pupil committees did all the planning and the health problems of each pupil were admirably stated. In this project, as in the health newspapers, the pupils took severe blows from one another. It is too bad that we cannot learn from children the ease and wholesomeness of direct dealing. This is a specimen page:

JONES, MARY ANN

Height, 53¼
Age, 10 yrs. 1 mo.

[photograph]

Weight, February 62¾
March 64¼
April 66¼
May 67

On an average she gains 1½ pounds a month. She has a blue card and has only 1½ pounds to gain before she is up to weight. She is trying to stop biting her finger nails, but her will power gets the better of her. She has never been absent from school since February, 1923. She has been to the dentists and she had five teeth pulled and two filled. In 1921 she had her tonsils and adenoids out but they are troubling her so she is going to have them out again. She has gotten an inspection slip every time except three.

The more unusual of the two projects was a health survey of the school building. The pupils worked out their questionnaires, worked up their results (in arithmetic) and

formulated their recommendations on the basis of their findings. This was one of the most original and outstanding pieces of teaching done during the three years of experiment with method. Unfortunately the papers were not preserved.

Nothing will take the place of the perennial "Health Alphabet," one of the most useful of the helps to teachers provided by the Child Health Organization. It was being used in the English classes before the present program began, and reappears every year.

The incidental reference to health made in all sorts of themes and stories is an excellent mirror of the reach and authenticity of the health teaching. Thus the following third-grade composition is strong as to health inference if somewhat insistent as to detail:

Long ago, the Mandan Indians lived in our state. They were strong and happy. Omepah was a little Mandan boy. Omepah's home was made of logs and dirt. And in the roof of the lodge there was a smoke hole. And when the smoke went out the air came in. And when Omepah's mother had to work inside she got plenty of fresh air through the smoke hole. Omepah liked his lodge. And so did his mother and father. Omepah was glad he had this kind of a home for he had all the air he needed. And when Omepah slept he had all the air he needed through the smoke hole in the roof. And under the hole in the roof was a fire pit and when it was cold his mother would build a fire in the fire pit and they would sit around the fire pit and tell storys. For the Indians were great story tellers. And Omepah like to hear the storys. This lodge that Omepah lived his mother made for the rest of family and herself. The hole in the roof helped to make Omepah strong the fresh air and the sunshine that came through the smoke hole helped make him strong to. If the boys and girls of North Dakota had a home like Omepah we would all be strong like the Indians.

Harrowing realism lurks in this sixth-grade paper under the innocent title "Talking Things Over":

JIM Hello, George, where you been this afternoon?
GEORGE Oh, I've been out riding in my cousin's car.

JIM Say, do you know what I saw this afternoon? Right down Broadway there came a motorcycle filled with buns that didn't even have any cover on them. I told dad to follow him up as long as he staid on Broadway. Do you know, he went right up in back of the ..... Cafe.

GEORGE Say, when ever you go in there put your hand under the table and see what you feel. I was in there once and I put my hand under the table. It was all filled with gum. I bet there was fifty pieces under each one.

JIM Well, I have to go because we're going to a play at the High School.

GEORGE Well, good-bye, Jim, see you tomorrow.

JIM Good-bye.

A certain competence of invention marks the moral drama composed by a sixth-grade girl:

HOW JACK MADE THE TEAM

Scene Dining Room
Time 8:40 a. m.
Characters

Boy—Jack	Spirit of Uncleanliness	Toast
Mother		Cereal
Coffeepot	Milk	Head of Lettuce
Doughnuts	Water	Spirit of Cleanliness
Pancakes	Orange	

ACT I

(*Mother crosses stage and calls Jack who comes in rubbing his eyes. He sits down at the table*)

JACK My, mother, but Red Grange was a wonder. Just wait until I make the team. I stayed for the second show too.

MOTHER No wonder you were out so late last night. Little boys like you should be home and in bed early. You can't make the team and not get enough sleep.

(*Mother puts cereal and milk on for his breakfast*)

JACK (*Pushing it aside*) Mother, can't I have some coffee and doughnuts?

MOTHER Why don't you eat cereal, Jack? That will make you strong and healthy. I'll make you some toast.

(*Mother leaves the room; Jack helps himself to coffee and doughnuts*)

JACK This is more to my taste. (*While eating, yawns and falls asleep*)

(COFFEEPOT *enters, beckoning to doughnuts*)

COFFEEPOT Here is one of our gang. I'll bet he hasn't his lessons for today. He drinks enough coffee to make anyone nervous.

DOUGHNUT (*Enters*) Another victim. Ah, doughnuts for breakfast. I'm greasy enough to keep anyone dull.

(SPIRIT OF UNCLEANLINESS *and* PANCAKES *enter*)

UNCLEANLINESS Good work, my fellows. Anyone is a friend of mine who sleeps with his window closed and neglects his tooth brush as Jack does.

PANCAKE I agree to your sayings. Among the bunch of us we have put low marks on his report card and as far as the team is concerned, he'll never make it.

(*Enter* SPIRIT OF CLEANLINESS *and followers*)

CLEANLINESS What do you mean? Jack not make the team? We'll see about that.

MILK (*Looking into Jack's cup; throws coffee out*) I'm far better than you. I'm a perfect food. With a little help I'll get Jack on the team in a jiffy.

CEREAL (*Looking over Jack's shoulder*) Doughnuts! This will never do. Doughnuts are greasy and heavy, they do not make a good food. Now I will produce energy and growing material. I help to make good marks.

ORANGE All people should have fruit in the morning. I am a good source for vitamins.

TOAST A growing boy should always have toast. I am a cereal too, by the way.

LETTUCE — You can make a good breakfast but he needs green leafy vegetables. My friends and I will be on hand at dinner and supper.

WATER — Yes, and he should drink at least four glasses of water a day so I'll be where he will find me handy. He also needs me for washing and bathing.

CLEANLINESS — You are all very good helpers. Now, I'll see that he uses his tooth brush, sleeps with his window open, bathes and keeps neat and tidy so germs won't like him. Now, let us get rid of this other gang.

(*They chase the others off the stage and go off themselves*)

(*Jack wakes up and rubs his eyes*)

JACK — Oh! What a dream. (*Jack thinks to himself*, I wonder if there is any truth in it all. (*Thinks*) I guess there is, all right! No more coffee and doughnuts for me. I'll just join the other gang and make the team. Now for school before I'm late, and after this, higher grades and the team!

Reading

The Fargo schools employ the eminently logical method of teaching children to read by reading. At once there appears an embarrassing discrepancy between supply and demand. Many books are necessary now, where formerly one reader was ground through intensively. In many first- and second-grade rooms, as well as some older ones, there were "library tables"—an indication of the children's ability to use reading as a means of finding out something interesting. But there are few pieces of good literature which deal with the life interests of the child, and among these, health—the most intimate and the latest to be recognized—is most poorly provided for. In lieu of ready-made health literature, stories made and illustrated by the children were in some cases kept as library-table reading.

FIGURE 19. Pages from two years' health reading books developed in a first-grade classroom.

Mother Goose fables and the standard children's literature should be taught for its own sake and never parodied—nor should health morals be dragged in. The children themselves, of course, will often make applications which seem artificial to the casual observer; they want the children of other countries to clean their teeth as they do, and criticize the omission if they do not. They disapprove of behavior among book children that violates their own standards. Children may make poor jingles, and write

distressing clap-trap, and grow thereby. But what is put in their hands to read must be first of all good English. The constant use and phenomenal sale of the few good textbooks on health should encourage the publishers to

FIGURE 20. A reading lesson based on a butter-churning project. "We made some butter," the flash-cards read. "First we washed the churn with hot water"—and so on.

meet the most widely felt need of third- and fourth-grade teachers—the need of stories that are at once good literature and good health teaching, that include health facts where they normally occur, or make incidental reference to the daily habits that the children are learning to take for granted. The material found most usable in Fargo is mentioned in the course of study.

Silent reading was used in Fargo, much as it is used by equally good teachers elsewhere, except that the larger place occupied by health in the child's vocabulary was reflected in the choice of material. The sudden enlargement of the vocabulary in this direction resulted in much use of seat

work involving word drill. Methods were chiefly variations on the use of matching pictures with words—drawing pictures to match words; drawing or coloring pictures to answer questions or to carry out written directions; filling in blanks

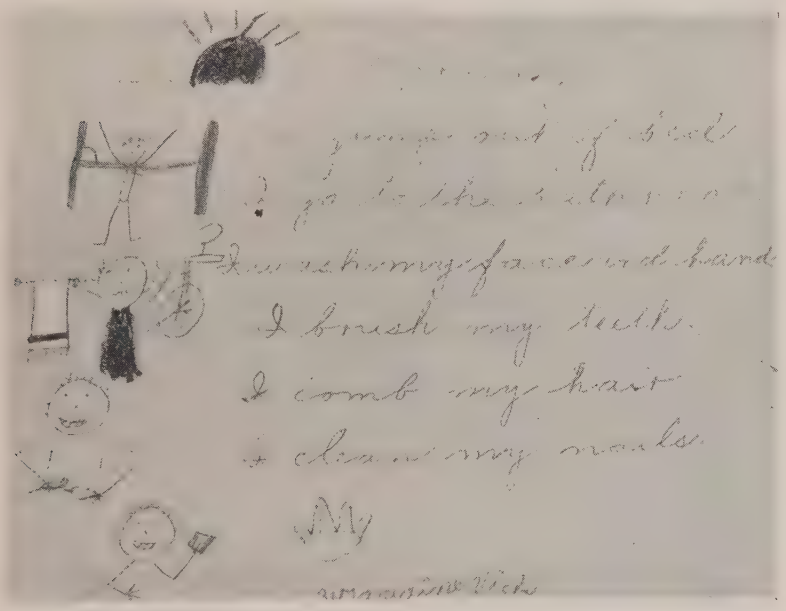

FIGURE 21. The reproduction fails to show the cheerful yellow of the sun.

with the word which tells the story; putting together cut-up pictures with their proper label; selecting words from various groupings. Once worked out, these plans remained in use after the initial need for a health vocabulary had been met.

In every first- and second-grade room a routine was introduced to insure that the children understood the vocabulary necessary for marking the health records. Printed sentences expressing in the simplest words all the essential health procedures of the day were supplied in duplicate to each teacher. These were used as flash cards, and when the sentences were mastered the duplicate was cut up into

words. The use of these was varied in many ways, often in combination with pantomime, until the children could read any reference to the health behavior program (*Figure 19*). All project work in the first two grades made skillful use of combined written and oral directions and discussion (*Figure 20*).

So much use of supplementary health material was made in the intermediate grades in silent reading exercises (reading for quick grasp of content) that this might almost be called a routine procedure. This was true particularly during the year's hiatus between the adoption of a new textbook and its arrival.

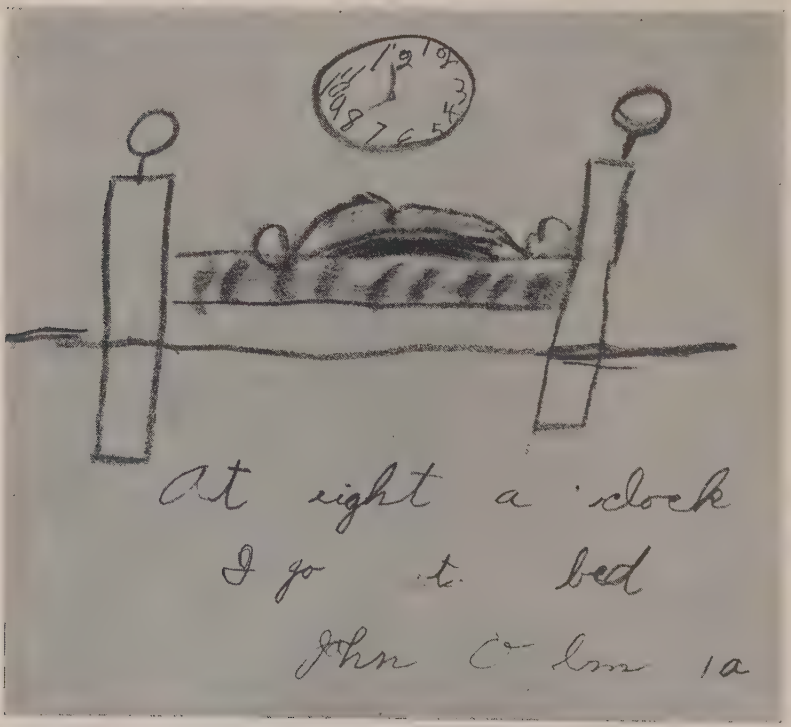

FIGURE 22. Complete repose is convincingly represented by this first-grade artist.

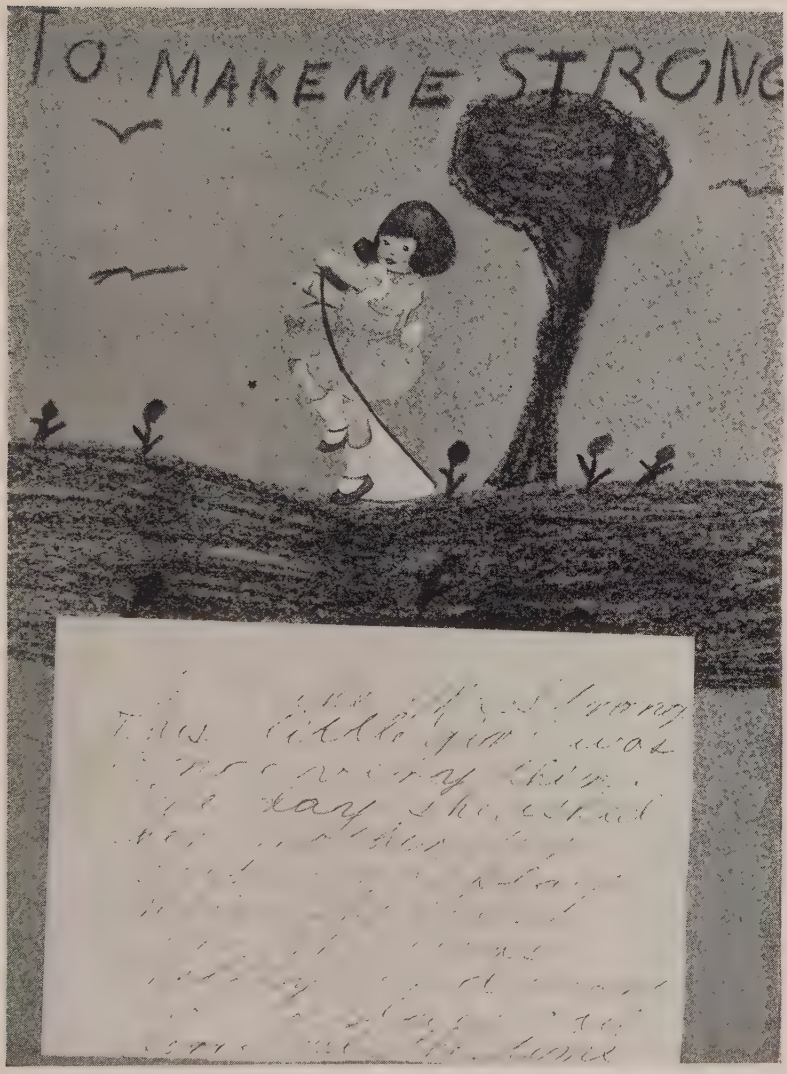

FIGURE 23. This is very characteristic of the children's stories. Events move abruptly: "When she came in she was helthy."

Art

Historically picture writing doubtless followed hard upon the development of oral language. In the primary grades

FIGURE 24. Interesting free cutting of paper in the first grade.

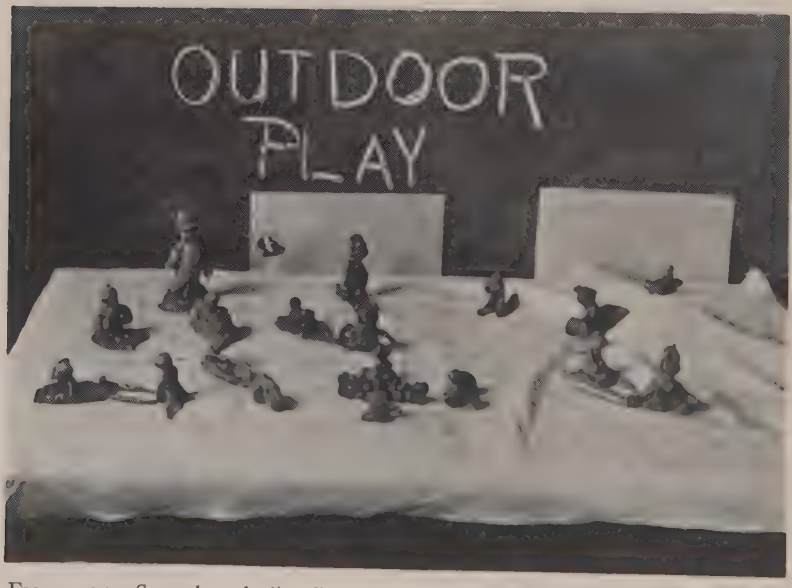

FIGURE 25. Second-grade "art" work makes use of modelling and the subject used here is close to the child's heart.

in Fargo the children are encouraged to make free use of graphic expression from the first. Typical uses of crayon, free paper cutting, and plasticene or clay are illustrated (*Figures 21–25*). Wet sand is sometimes used but modelling

FIGURE 26. A sand table representation of The Three Bears brings both plasticene and paper cutting into use. The familiar story might have been first told for a health purpose, so rich and inevitable are its allusions. Health was not taught by means of The Three Bears, but once the story was heard it could not possibly be divorced from health suggestion in the children's minds.

on the sand table is usually a cooperative and more formal matter with, therefore, less joy of achievement. As an aid to instruction, and in some cases a device to assist memory in keeping the health program, good use has been made of the sand table (*Figures 26–27*) but is hardly to be included here among the art media. One teacher reported snow sculpture which, alas, melted before it could be seen or photographed.

Health interest fulfilled a very useful purpose in the plans of the art teacher. The emotional color attached to the health propaganda made it appropriate subject matter for expression through art forms.

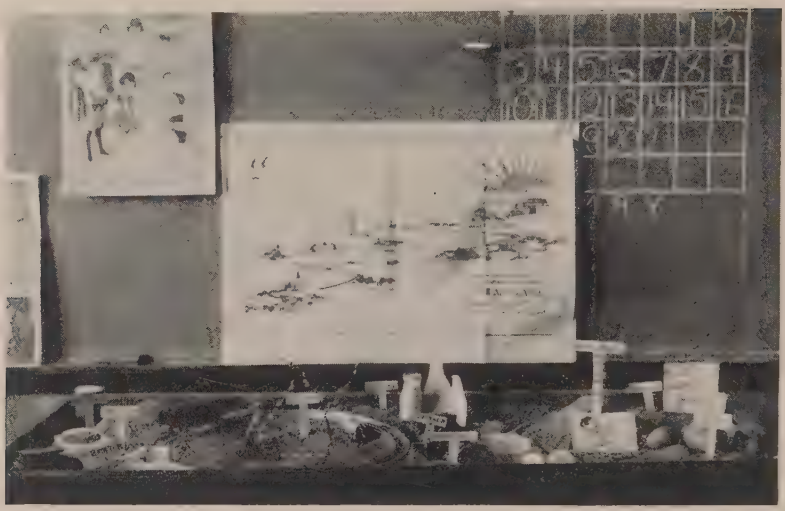

FIGURE 27. Building "health land" is perennially enjoyable. Here it is done by second-grade pupils on the sand table. The children's interest gives this great drill value.

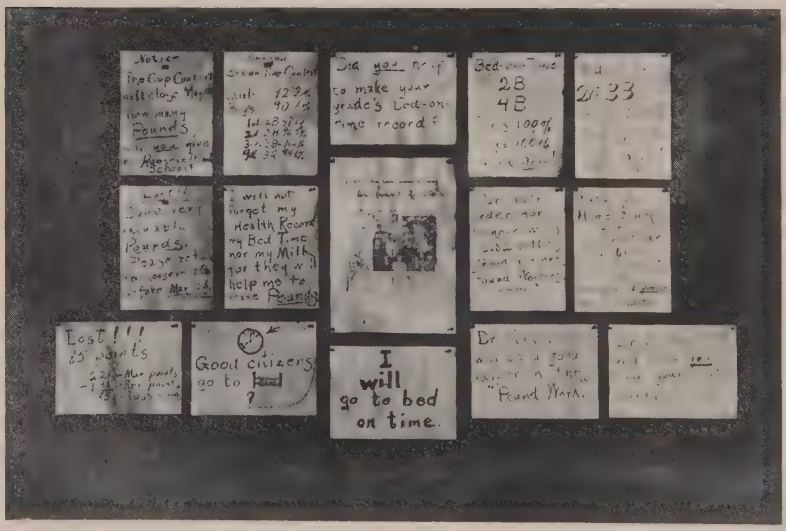

FIGURE 28. These and many more bulletins were dashed off by a busy principal and kept posted on the bulletin board in the hall. They were never allowed to get stale but constantly focussed the current interests of the school.

FIGURE 29. Posters of somewhat more lasting appeal.

In poster making the frequency with which health topics were chosen was a good index of the children's health interest (*Figures 28–30*). In the first stage of the community program poster making was capitalized as an aid to health propaganda and the use of cut-out pictures from home was encouraged in every possible way (*Figure 31*). When every member of the family has to join in hunting for the one picture which will complete a set of illustrations of the health essentials, it is hard to ignore the essentials themselves. If mother has to sacrifice a page from her favorite household magazine, and even copy something from the reverse side which she wishes to preserve, she has begun to give till it hurts, and unconsciously she has made the health cause her own. The teachers were careful that no child had to report home that "my picture wasn't good enough to use."

To encourage the use of these cut-out pictures every room was provided with a large scrap book with a plentiful supply

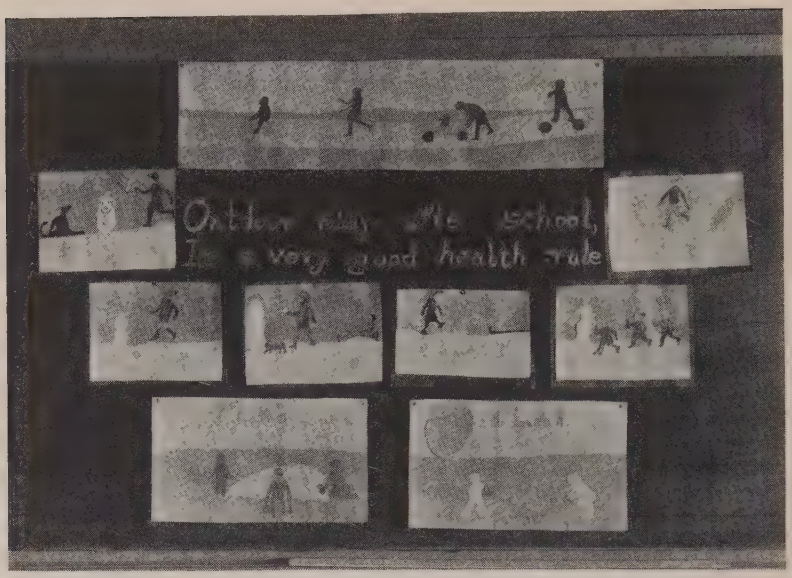

FIGURE 30. Good free poster-making by second-grade children.

of tough neutral-tinted leaves. Mounting paper of many colors and crayolas for tinting were available. Many variations of the scrapbook or poster theme were used. Often the simplest proved the most effective; the children never tired, for instance, of just telling a story about a selected picture. Some library tables contained envelopes of pictures covering all phases of the daily routine, and arranging a series in order, from getting out of bed to getting in, was a never failing method of drill. Pointing to a similar series mounted on cards was an interesting way of reporting the daily health performances. Children paraded before admiring principals with pictures representing their successes: picture puzzles and word-matching games served for seat work; pictures arranged in sequence on a roll of wrapping paper made a movie film. Pictures sometimes formed the backdrop of a poster-board stage, on which cut-out dolls

FIGURE 31. An unbelievably moral poster, using a cut-out picture brought from home. The bath takes precedence over the Christmas presents!

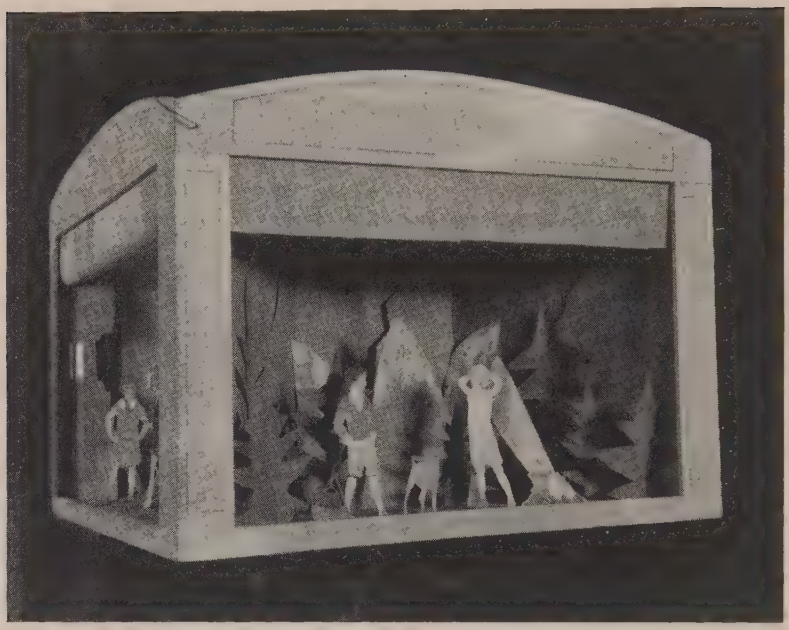

FIGURE 32. Cut-out pictures were here used as actors in a health play in a pretentious stage setting.

acted health plays (*Figure 32*). Food pictures mounted on heavy paper to make them stand easel-wise were used in cafeteria and housekeeping games; others formed the stock of stores in which arithmetic was painlessly acquired. Older pupils found caption writing for the posters and the writing of original stories about pictures an enjoyable variation of theme writing.

During the first year two practices, later discontinued, were common; the use of ready-made posters instead of those produced freely by the children, and the copying of poster patterns. This was due to three factors: the availability of the commercial poster and the saving of a busy teacher's time by setting a copy; the unfortunate influx

of visitors to "see" the health work—one of the greatest handicaps the program suffered; and the teachers' scholarship contest. It was natural for the teachers to feel that careful copies of well designed posters made a better appearance in their rooms than the crude results of spontaneous invention.

No official policy was laid down. Teachers were encouraged to develop their own way of doing things. Commercial posters were bought and laid before the teachers for their own selection and criticism. But as the deliberate correlation began to give way to the spontaneous use of art media by the children for the expression of their newly acquired health interest, the "canned" posters began to disappear from the classroom walls and the children's own work replaced them—not as a permanent decorative scheme, but as the natural flowering from time to time of the art periods.

Two formal correlations remain. In the junior high school art course a month each is devoted to the study of dress design and interior decoration. At the request of the art supervisor a list of health considerations intrinsically related to these two subjects was prepared, and these formed the basis of incidental reference by the art teacher (*Figure 33*).

Another indication of health consciousness, though hardly to be called correlation, was the interpretation of pictures by the children. All grades give instruction in the appreciation of pictures, and most of the paintings selected for their art values presented obvious health suggestions. It was really not a case of dragging in health when a little girl said "The Angelus" was her favorite picture because the people were planting vegetables: the garden was much closer to her own experience than the distant bell.

FIGURE 33. In her dress design periods the art teacher made incidental reference to numerous health considerations which had been called to her attention by the art and health supervisors together.

Scarcely to be classed as art, and yet the source of much enjoyment, was the practice of writing stories with occasional use of pictures in place of words. If the picture involved a play on words so much the better. This rebus writing was precipitated by the distribution of a Metropolitan Life Insurance pamphlet urging diphtheria immunization. The children took great delight in working out the words and in concocting still more baffling ones. It was not good language work and certainly not good art, and the health interest was manifestly secondary. But the adults refused to meddle, and the custom persists to this day. It seemed to tap some level of interest which made it valuable drill for both primary and intermediate children.

Cartoons sprouted profusely in the fifth and sixth grades (*Figure 34*). Children copied cartoons from the health

magazines in the demonstration library and developed their own. Nothing of permanent value evolved, but there was clear evidence of an interest so intense that it required exercise of all possible means of expression. Releasing one major life interest gave these children a fluent eagerness for self-expression that made some of their elders envious. Perhaps if as young children we were all allowed to develop enough interest in things we would again dance it and sing it and beat it out of drums, and model it and draw it—as well as talk it and write it as we sometimes make shift to do now.

FIGURE 34. The making of health cartoons appealed to fifth-and sixth-grade children.

Music

The relation of music to health is more direct than any propaganda manipulation of song as a vehicle for health instruction. The conditions of mind and body necessary to good singing are, to an extent which cannot be overemphasized, conducive to health.

In the first year of the demonstration "health songs"—spurious jingles desecrating classical or familiar airs—sprouted lushly. They were promptly weeded out. The music supervisor took the very advanced position that children could and should learn to think in musical phrases as early and as easily as in words. Much effort was being made when the health program began to encourage com-

position, and children were invited to produce and set to music phrases with health significance, rhythmic impulse and esthetic content. As was the case with verse and drawing, it proved too difficult to explain to an inventive child why raindrops were appropriate for song and drinking-four-glasses-of-water-a-day was not, and the effort to impose a definition of esthetic content was given up. The teaching of composition was abandoned in the year after the health program began.

Nature Study

Though often hailed as the Moses to lead health education into the promised land of effectiveness, nature study offers less opportunity for successful correlation with health teaching than does any other subject. Every attempt to make it the vehicle of health instruction in Fargo, during these three experimental years, ended disastrously. The health subject matter harnessed to the "nature" lesson was sound; the interested first-hand contact of the child with a natural occurrence was good; but the task of combining the two into a causal relationship required a mixture of scientific knowledge and pedagogical experience that not a dozen educators in the country could show.

Nature study is a most difficult subject to teach because it impinges upon every science. Only its wide range makes it possible at all, for a teacher thoroughly grounded in one science can select for consideration the phenomena in the field which she does know, and can say honestly in answer to the questions of her class "I don't know much about that, but over here is something interesting that I *do* know about." In harnessing health to nature study this saving choice is taken away, and it is necessary to teach phenomena which

FIGURE 35. The rabbits are here under false pretenses. They did not "teach the children to eat green leafy vegetables," but they increased the number of interesting associations in the children's minds with this desirable habit, and so strengthened its appeal. The first-hand experience of the children with the rabbits helped them to observe both likenesses and differences between themselves and other living creatures.

involve every known field of biological science. The result is a collection of false analogies which tend to kill the child's ability to form clear-cut judgments.

Janitors permitting, rabbits and baby chicks can be raised in the classroom, where the children can and should become familiar with facts common to all animal life (*Figure 35*). But so far as health is concerned, rabbits, like children, show disturbing discrepancies between behavior and its apparent results. If an animal-feeding experiment is carefully done, it is likely to convince the experimenter that it cannot be done carefully enough in the classroom to prove

its point truthfully. The wrong one is too apt to gain, or the right one to cap the climax all too effectively by dying. The effect on the children is such that a conscientious teacher will not risk a second trial.

A pair of white rats, successful examples of the effect of a normal and of a deficient diet, were taken to the classrooms, where the supervisor made the utmost effort to direct the children's attention to the phenomenon in a constructive way. But subsequent talks with the children confirmed her opinion that animal experimentation, even if it is technically successful, is bad teaching for elementary pupils if it involves even the slightest discomfort or unfavorable treatment for the animals. In this case many a child who was himself more seriously underfed than the rat received only one lasting impression—sympathy for the runt.

True, there is still the insensible and responsive plant. But the life processes in plant and animal are so fundamentally different that all the obvious analogies are false and all the true analogies are so subtle that many years of technical study are necessary before one can discriminate. Teaching the child that he needs sunshine by setting a plant in the sun to grow green is a misuse of the facts. The child in the elementary school takes most of his judgment on faith; it is a pity not to play fair with him.

That the personal bias of the supervisor, based on previous experience, might not outweigh local experience, a deliberate effort was made to experiment freely with the use of plants in health teaching. The best and freshest seeds and chemically pure plant foods were obtained; they were put into the hands of most skillful teachers; but the results were negative. A special test, for instance, was made to see whether it was possible to demonstrate the fact that green leaves contain iron. The teacher reported that the

FIGURE 36. Sound health facts joined in more or less unholy alliance with nature study. Health is not being taught by correlation with nature study, but the real ardor for health has helped to take nature study out of the books into outdoor experience.

children were vastly interested in the root growth exposed in the bottles of nutrient solution, but were cold to the difference in composition between the with-bottle and the without-bottle, even though they had helped to mix the solutions. But their faith in spinach was not in the least disturbed by the distressing tendency of the ironless solution to produce green leaves. They had accepted the teachers' pronouncement that green leaves contained iron, which they needed, and they continued to eat spinach on faith. The lesson was valuable not as health teaching but as nature study—helping the child to assemble the raw material for later scientific comparison.

Plant analogies, then, are spurious. Animal analogies, if successfully demonstrated, are too strong meat for chil-

dren's sensibilities. There seems to be little room left for teaching health behavior by correlation with nature study.

Arithmetic

Health teaching never consciously reached out to make use of arithmetic as it did with art and language in the early

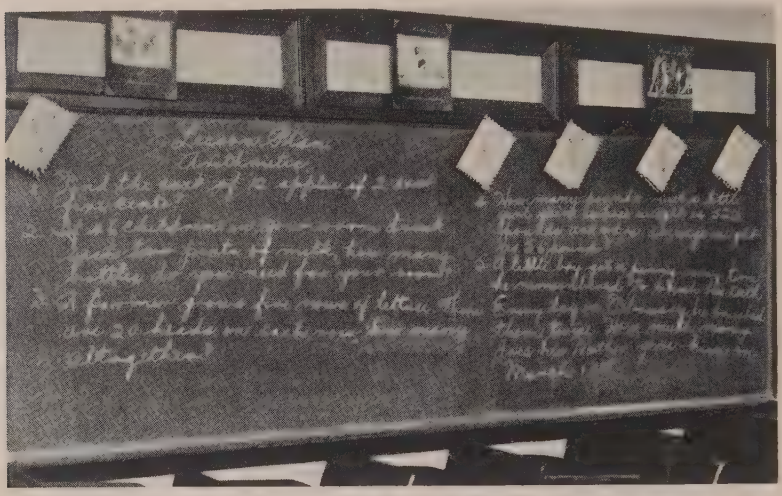

FIGURE 37. Obvious materials are here built into an arithmetic lesson.

stages of the health program. But the growing health interest naturally supplied material for problems in arithmetic. Children were not taught through arithmetic to drink milk, but there the milk was—so many bottles, so many straws, so many children, so many tickets, so many nickels, pennies, or dimes (*Figure 37*). There was cereal cooked in the classroom to be measured and the recipe written out. There were butter, cottage cheese, lettuce sandwiches, to be provided for mothers' parties, and the ingredients calculated to the last leaf of lettuce. Gardens were planned for and plotted; seeds were ordered; cafeterias and stores were managed and patronized in play

(*Figure 38*); proportions were calculated so that posters might be pleasing; gain in weight and height was constantly graphed; scores were tabulated by schools; school records were computed for the cup contest in the first two years; it was interesting to find out how each room affected the

FIGURE 38. The health cafeteria was a real project and the source of much joyful drill on health information. The edibles are cut-outs.

school standing, how each individual affected the room. The eighth grade, working out a "health bank book," discovered that it was necessary to "weight" the scores of certain health habits, and decided independently to keep the score on a percentage basis. One class calculated the amounts of food needed for the winter by each family, and worked out the saving to be obtained by buying in bulk for winter storage, and so actually affected the buying habits of the neighborhood. Arithmetic did not teach

health, but in some cases it first became an interesting and reasonable procedure because it borrowed its material from the child's health experience.

The Social Sciences

At first, and to some extent throughout the demonstration period, correlations with geography and history were deliberately made for their propaganda value. A passing word about health, lightly and quickly dropped into the discussion of a point in geography or history, was a very successful means of creating among the older children the impression that the health facts and health practices which they were struggling to assimilate were universal. Imperceptibly this sort of correlation began to work both ways, and the growing health interest of the children tended to vivify their study of other lands and other years.

To enumerate instances of such health references in these two subjects would be to reproduce the course of study in every grade, since no investigation of the life and environ-

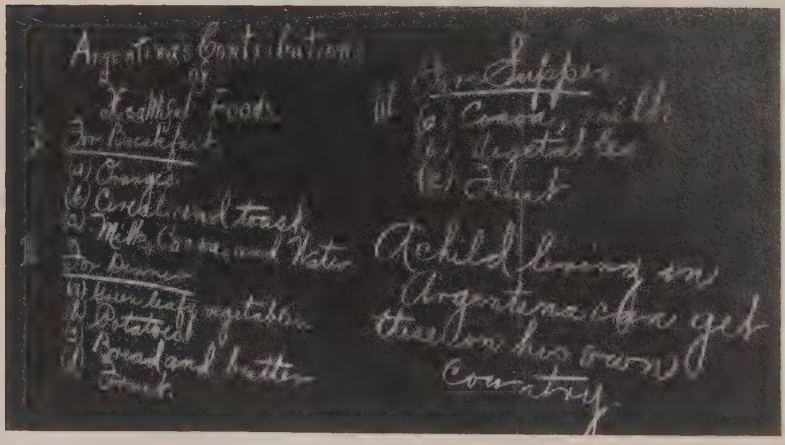

FIGURE 39. A correlation that works both ways. The geography lesson is vitalized by the connection with the child's own experience.

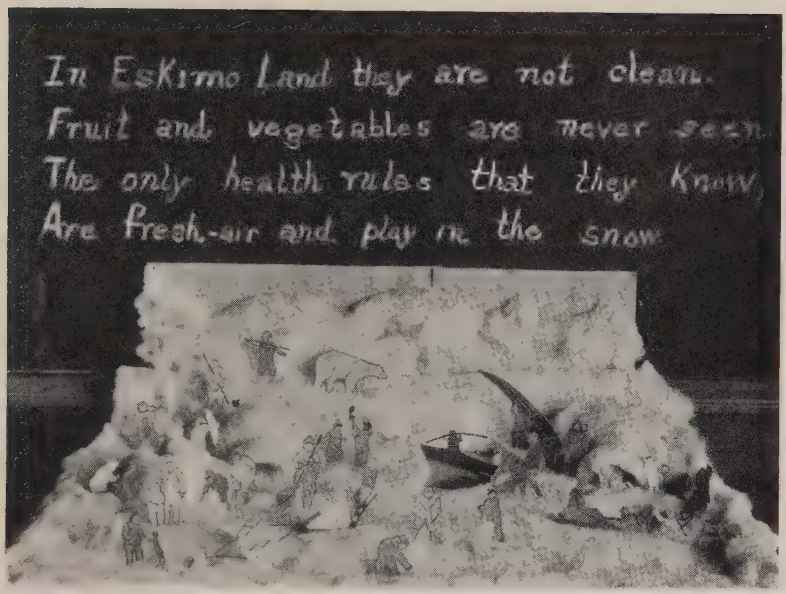

FIGURE 40. A good example of the pitfalls of correlation. The rhyme, copied from a purchased "health chart," attempts to link up good health teaching with bad geography.

ment of other peoples can fail to suggest comparison with our own (*Figures 39–41*). Travelogues were a popular means of expressing this interest. Pictures to illustrate them were mounted in scrapbooks or on "movie" rolls, or simply assembled for the time being in reference books from home or library. Often the health interest was the force that broke down subject matter partitions and led to the expression of geographical and historical fact in art or dramatization. Commercial geography, when it turned to the sources of supply of necessities and luxuries, naturally fused with the health evaluation of familiar commodities. The conventional device of working backward from the dinner table was well used by a fifth-grade teacher, to bring out both geographical and public health material:

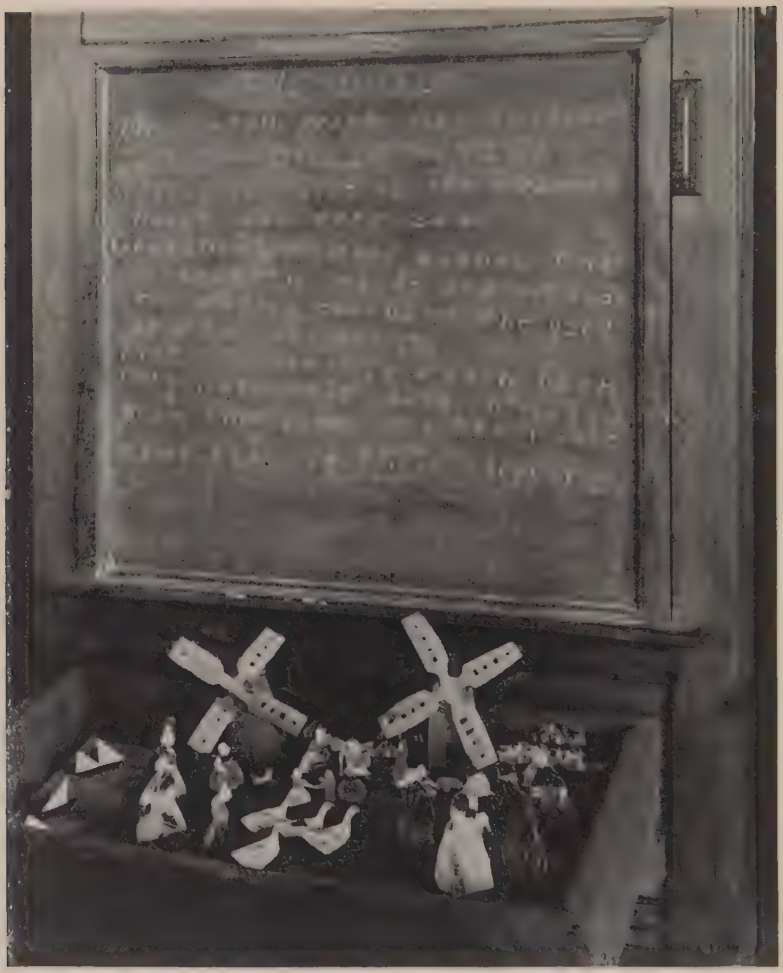

FIGURE 41. The traditional cleanliness of Holland serves the teacher's purpose in endless correlations—without much reference to the cold facts of sanitation.

A HEALTH DINNER

1. Planning the menu.
2. Obtaining recipes for the making of food.
3. On outline maps, tracing where food comes from.
4. Making imaginary trips to these places, and thoroughly studying each industry involved.

5. Field trips and excursions by individuals or groups to nearby places: water filtration plant, dairy farm, vegetable farm or garden, flour mill.
6. Oral reports on all the above contributions.
7. General write-up of the entire project.
8. Preservation in booklet form.

Another third-grade project is a typical illustration of similar use of historical material to underscore health teaching:

A PILGRIM PROJECT

We first studied the Pilgrims in England. We followed them to Holland and then to America. We built log cabins on our study table and decided that the Pilgrims would not need open windows at night since the spaces between the logs would allow plenty of fresh air in. We also thought the fireplace might help to ventilate the cabin.

We built fireplaces and studied their ways of preparing meals. The copper and iron kettles were always kept scoured and shining bright. We found they ate a great many coarse foods, such as cracked wheat, parched corn and Indian pudding, as well as the green vegetables and fruits they gathered from their gardens and the woods nearby. We were interested in grinding some corn in a coffee mill and comparing the size of the grains with our corn meal of today. We knew these coarse foods were good for them and kept them healthy and we decided that they took the place of our toothbrushes. Corn bread made by the Pilgrim mothers, we thought, must have been rather hard.

One day that we called Monday, the girls pretended to wash clothes and air the bed clothes. We took this chance to study the Pilgrims' beds. We also scoured, spun, wove and brushed up the hearth with a turkey wing. The boys pretended to gather berries and watercress or to shoot small game.

The Pilgrims went to bed early, we found, for they wanted a good rest after their hard day's work. They wished to be as strong and healthy as they could possibly make themselves. They could not afford to have one person sick, since half of the hundred that came over had died the first winter from poor food and exposure. They bathed regularly too, for they loved cleanliness. (Their course, hand-woven towels helped keep their skin in good condition).

We thought the Pilgrims would be able to dry some of the fruits and vegetables to save for the coming winter. We knew some could be stored without drying.

We found from our books that the Pilgrims were always cheerful even though their work was hard and they were very poor. We decided their habits of health, cheerfulness, and hard work were good ones for us to follow.

So the Pilgrims, Moses, Babe Ruth, Theodore Roosevelt, Eugene O'Neill, and many other historical and contemporary characters ranged themselves in an otherwise uncongenial group as prophets of the healthful life. An ambitious and particularly interesting synthesis of health material from historical sources, to the mutual advantage of both subjects, was planned by a sixth-grade teacher Her history classes for a week were given to tracing the development of public health knowledge and practice.

OUTLINE OF HISTORY WORK—HEALTH WEEK

Monday: Houses and home sanitation.

Egypt; Greece; Rome; France; England. Give the difference in home conditions of serfs and nobles. Compare these conditions with those of today in respect to ventilation, lighting, floor coverings, furniture, and yard space.

Summary: evolution of home conditions.

Tuesday: Streets and sewerage.

How wide were the streets? How were the houses built on the streets? Why were the cities so crowded in the early days? How did the guilds affect street conditions? How were wastes cared for in the early days? Later? Now?

Summary: evolution of street and sewage conditions.

Wednesday: Water supplies; aqueducts; food.

Where do we find ancient aqueducts? Why were they built? How did the Crusades affect food and water supplies? What was the chief reason for the desire for spices? Do we want spices for the same reason now? Why?

Summary: name the different foods brought to the northern people as a result of the Crusades.

FIGURE 42. An admirable project worked out by a geography class in the study of North Dakota farming. Health references are intrinsic to the subject matter: it would have been artificial and unnatural for these children to have studied the life of their state without discussing its health aspects.

Thursday: Baths

Bathing in the southern countries; the northern. Turkish baths. Public baths. How many bathed at once? Supplies of towels and linen.

Summary: evolution of bathing and its spread from the southern countries through the northern countries; the present.

Friday: Schools.

Did the ancient schools teach health? Where did we get the motto "A strong mind in a strong body"? How did the people of the Middle Ages work for a strong body? How do we? Why did they take the boys away from their homes? Why were not the Romans a strong people at the time of the Hun invasion? Is there any difference in the teaching of health then and now?

Summary: Brief review and comparison of houses, home conditions, streets, sewerage, water and food supply, baths and health education.

North Dakota history and geography link themselves most closely perhaps with health considerations. (*Figures 42, 43.*) The children accepted, much more clearly and simply than adult inhibitions allowed, the idea that in working hard for their new health standards they were beginning a new chapter in the history of the state and were in a fair way to influence the world at large. Pride in their state and in their Viking ancestry were quickly mobilized as the strongest sort of reinforcement for their health efforts. A geography scrapbook made by a 6A class shows how completely health values had emerged as intrinsic in the study of geography. The book begins with a map showing North Dakota as the geographical center of North America, with the characteristic caption "Not too hot—not too cold—not too dry—not too wet." The claims of North Dakota to the

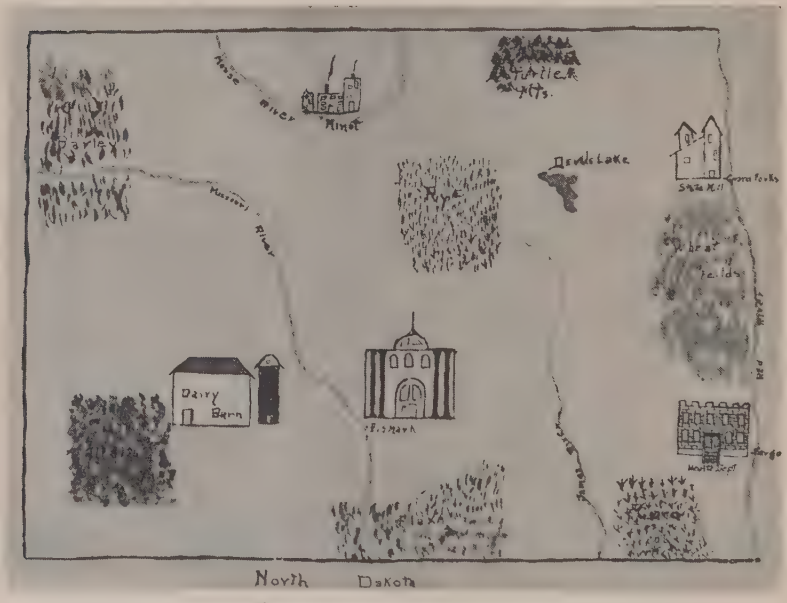

FIGURE 43. A map of the state which pays its respects to health details.

title of "the sunshine state" are then set forth in relation to a discussion of the therapeutic value of sunlight. Even the birds, one reads, "are very cheerful for they fly in the fresh air." An original play, with photographs of the children in costume, appears on a later page. This deals with Indian life in North Dakota and compares the health habits of the Indian children with those of their white successors. Several pages of pictures of valleys and lakes, shoulder-high wheat and ten-foot corn lead up to an original play on the theme of Roosevelt regaining his strength in North Dakota:

Characters: ROOSEVELT
GEORGE } *cowboys*
AUDRY }
SNOWSTORM, *cook*

Place: Sitting on bench near Roosevelt cabin

ROOSEVELT Glad to see you boys.

AUDRY Had a good day of it.

GEORGE But look at Ted! He looks like another man since he came to North Dakota and lived the life of a rancher.

ROOSEVELT But what does it?

AUDRY Why, the sunshine, air, food and climate; there's plenty of warm sunshine, lots of fresh air, good simple food and good hardy climate.

GEORGE You've left one out. Sleep is quite important. Now in New York didn't you go to different things in the evening, and come home as late as one A. M.? Then you were weak. But now you can ride and shoot as well as any of us.

ROOSEVELT That is all very true. By the way, I was going to tell you—when there is another war which I wish would never come, we'll join and form a regiment of our own and we should be able to clean up on any army, double our size.

AUDRY Must be going to rain, look at the smoke coming down. It is almost to the ground.

ROOSEVELT Nothing like the smoke in New York, it nearly choked one when it was going to rain.

GEORGE Hate to live in New York!

AUDRY So'd I.

ROOSEVELT That reminds me that I'm hungry.
GEORGE (*Steps to door and calls*)
Voice from cabin.
SNOWSTORM Not quite.
AUDRY We'll soon have to go in, its going to rain.
ROOSEVELT Let's sleep out tonight, our tents are waterproof. It will do us good.
GEORGE Good idea.
AUDRY Better get our tent up before it rains.
SNOWSTORM Dinna weady.
AUDRY George, let the tent go till after dinner, and the last one to the washstand has to sleep on the outside.
(*All wash and rush in*)

The theme of North Dakota *vs*. New York is handled even more firmly in a pair of pages on which contrasting pictures of Fargo and the metropolis are shown, with captions by the children. A Fargo home with wide lawns is set against a picture of a picnic party eating on the graves in Trinity Churchyard! Two views of Fargo's Broadway and two of New York street canyons are labelled, "Notice what narrow streets there are in New York while in Fargo they are quite a bit larger. In the city of Fargo the buildings aren't in such a mess as in New York." Fargo children pity, simply and sincerely, children who have to live in New York.

CHAPTER IV

CONTESTS AND RELATED DEVICES

IN considering the use of the large and heterogeneous group of methods which appeal in some way to the spirit of emulation, each case must be a matter for separate judgment. Some years ago the writer condemned them all as "undignified sugar-coating of truths which are intrinsically interesting if simply and directly presented as natural science." Three years of watching the weight curve slowly climb back—one hopes for permanent occupancy—to the peak which it reached in the first year of direct propaganda have somewhat changed her viewpoint; they have emphasized the difficulty of holding fast the results of the initial propaganda till the health program is established in organic habit patterns. After some months of struggle against personal, family, and community habits the child's knowledge and desire easily falter, and the promised future gain in health loses its appeal in favor of the immediate indulgence. This means a long, long stretch of drill, and many good teachers in Fargo found value for drill purposes in devices which had little relation to health as a natural science.

No rules can be laid down as to what aids to memory and incentives to effort are needed for the sake of drill, and still less can any orderly progression by grades be worked out. Successive teachers find different methods necessary with the same child—one relying successfully on suggestion or "assumption," another finding it necessary to plan constantly new devices to lure him on. There must in any case be constant re-presentation and continuous motivation of

an apparently arbitrary set of procedures that must be kept going in order to become habitual.

Once in a while a teacher has the calm faith in her own power which makes her sure that her simple statement to the children of what is good to do is all that is necessary. And it is—if she most subtly and continuously thereafter assumes that of a certainty they are doing it, and shares with the children, in a self-respecting fashion, the reasons for so doing. But most teachers need the device. Even the most earnest smile gets tired; and holding forty youngsters to heroic effort by sweet calm assumption that they *are* being heroic takes it out of you. So an occasional lazy-back device and a sugar-plum in the form of a gold star after a name does get the spinach down and helps get the pennies past the candy store until the new régime becomes the natural mode of procedure. Every teacher in this group has used some simple aids to continuity of effort, though the better the teacher, as a rule, the fewer the devices.

Granted that the goals of effort to which the children are being urged have been expertly chosen—that every item on the health program is scientifically sound and within the power of the child to attain by his own effort—how may memory aids and external incentives be applied legitimately to help him succeed?

The first and most important consideration is that the whole-hearted desire to achieve good health habits and the most earnest endeavor to do so must have been induced before the device is brought into play. The first presentation of the desired behavior item should *never* be accompanied by the idea of emulation or by any artificial stimulation whatever. This is the heart of the problem. As the need of help appears, the device can be suggested to the children frankly as a way to help them remember. Some-

times it happened in Fargo (much to the secret glee of the teacher) that the children reacted to such a suggestion by undertaking to prove that they needed no artificial stiffening of the backbone, like their less virile neighbors. Keeping score on themselves to prove they needed no stimulant was the most subtle and effective device that could have been offered them.

The second ruling principle is not to use the artificial aid unless it is really needed. Some teachers are strong and skilful enough to hold effort at its peak—most of the time—without it. As the teachers gained in individual understanding of the children they found that they placed less reliance on devices and contests which make no discrimination between members of the group.

The third consideration is the most obvious: if it works, a device is worth studying to find out why it works, regardless of pedagogical theory. It may work too well—that is, the child's attention may be focussed on the device rather than on the health incentive. It may work too easily—as sometimes happens with a competent but uncritical teacher who gets results with good, bad, and indifferent methods. But if it is psychologically sound, if it stands the test of group trial, and if it produces the desired health behavior, it is worth a place among legitimate educational methods.

Assuming that every child wants to carry out the health program and is really trying to do so, three sorts of appeal to the spirit of emulation may be made to help him:

1. Setting the child to compete with his own record.
2. Setting one group to compete against another group.
3. Setting the child to compete against the group for a prize, reward or privilege which is granted either to the first or best in any common effort or to all who reach some common standard of accomplishment.

These are listed in the order in which, in Fargo, they seemed to be desirable. The third method is not only less valuable than the others, but it presents some serious dangers.

The Child Against His Record

There can be no consistent progress without something to measure progress against. The greatest value of the individual competition against past accomplishment is felt in the older grades, where the reasons which make success desirable are fully understood. Many teachers helped their pupils plot a habit graph in the struggle with some particular *bête noire*. During the first two years the large individual weight graph was much used (*Figure 44*). The degree to which the weight curve followed faithful observances of the entire health program (not milk, not sleep, but the unit

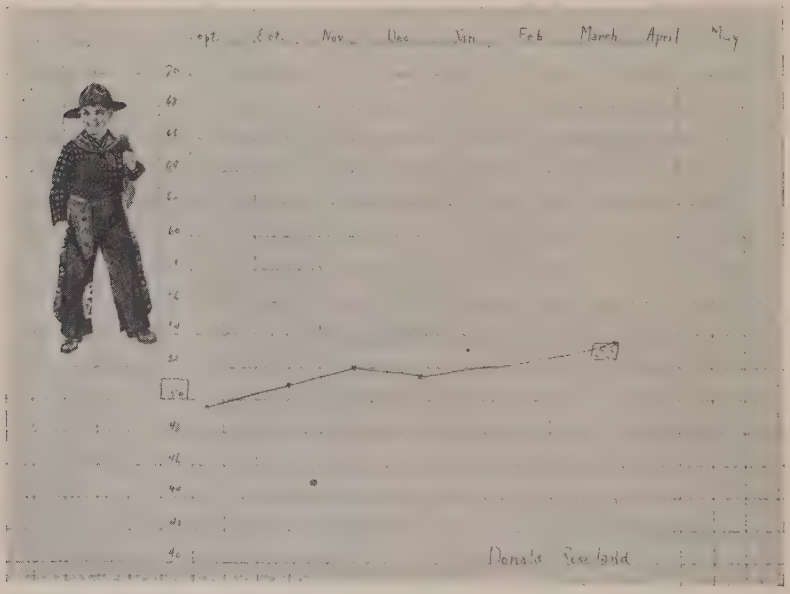

FIGURE 44. The choice of the decoration here tells its own story of childish motivation. The teacher's notes on this child—and on his classmates—carried information which helped to explain the weight curves.

program) made it one of the most valuable aids to community habit formation. The same story told on the weight card gradually took over the function of the separate graph after home habits were pretty well adjusted to the program. Even the first-grader understood and was helped by the graph in such simple forms as moving himself (represented by a paper doll) one step farther up the hill of health; one room of first-graders, indeed, plotted their weight curves quite as intelligently as did the sixth-graders. It helps to see the record of accomplishment in graphic form.

The use of zoning in interpreting children's weight (white—average; blue—somewhat below average; red—much below) lends itself with great flexibility to the struggle to better one's record. The use of the colored weight report cards is in itself a constant measuring against past accomplishment. Its objectivity is with the first-graders at once its value and its danger; care was taken to make it clear in every room that the "white card" was a *sign* that the child was keeping up to weight, and that gaining weight was a *sign* that he was growing well. With this safeguard, the colors had propaganda value. The colored cards were abandoned after the propaganda purpose was served, but the colors were so useful that they are still used in many ways.

The way in which the teacher's personality can invigorate a purely artificial device of this sort (*Figure 45*) is perhaps apparent from the following narrative written by a teacher who does not need the help of any device:

We have three large paper houses in our first-grade room. They are fastened to the blackboard on a background of trees, ground, etc.

The first house is white. This house is the largest and brightest of the three and has a lot of window space in it. We call it our

FIGURE 45. An unusually substantial "health house."

White Health House. In the windows are paper dolls, representing the children who are up to weight. They live in this house. Each child brings his own doll, trying, of course, to find a healthy and happy-looking one.

One little girl brought a paper doll with one of its arms raised up. She informed us that she thought it would look as if she were waving and calling to other children, telling them to hurry and keep the health rules a little better, so that they too might move into the white house.

The second house is the Blue Health House. Here live all of the children who are underweight. They try so hard to keep every health rule and look forward to each new weighing to see if they will be moved to a window in the white house. Those children who are in the blue house, and have only a few pounds to gain, are placed near the door.

Our Red Health House is the least interesting looking. This is where those children who are 10 per cent underweight live. We are glad to say that this house has had few occupants. It stood vacant for several months. At the last weighing little Helen moved in. . . . It seems to be the best thing that could have happened to her. She was one of my problems as well as her mother's. Up to this time, she has never quite believed that keeping the health rules makes a difference in one's health. She seemed interested in our daily discussions and dramatizations and other phases of health work. She would tell us that cereal, fruit, toast, and milk were the things she likes best for breakfast. She knew every health rule, but never really applied them very well. This little six-year-old "ran the home," making her own rules for bedtime, meals, etc. Since she moved into our Red Health House, she has kept the rules so well that her mother came to school to see what had caused the change. Helen asked me if I would be real surprised if the next weighing showed that she had walked out of the red house and into the white house without even stopping to look at the blue house.

At each month's weighing, the children who have made any gain in weight are moved up to the next house. If they are already in the white house they move to a higher window. Of course once in a while some one is moved back because of loss of weight, but this does not happen very often. At present we have thirty children in our White Health House, twelve children in our Blue Health House, and one child in our Red Health House.

Our health work is varied, but whether it's in reading, writing or language it somehow centers around our health houses, which we think of as the children's own homes where health rules are always kept. I have never gotten as good returns from anything as I have from this health house project. The interest from the parents has been great. Many mothers have come to school to find out more about our houses. Older brothers and sisters have come in to ask about them.

Whenever a child does move into the white health house, the whole grade rejoices and is happy to know that another child has been able to keep the health rules and so has better health.

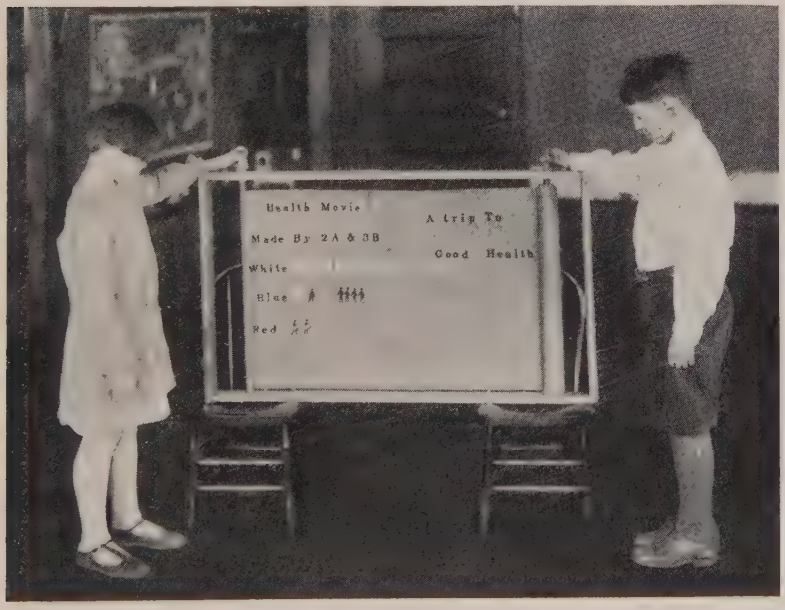

FIGURE 46. The entire second grade joined in making this "movie" (the janitor made the frame) which added interest to a familiar device for graphing weight progress.

FIGURE 47. Another graphic device in which the weight cards themselves became animated and moved from one level to another.

One of the clearest ways of graphing progress for the first-graders is the use of rows of figures—red, white, and blue—with one figure for each child according to his individual weight zone. The most simple and convenient plan was devised by a teacher who sewed three strips of heavy paper on a neutral-colored paper background, with space above the stitches for the feet of the little colored paper figures to be slipped in. When a child's weight changed so that he could change from a red figure to a blue or white one it was an event of much importance. Rubber stamps and paints were similarly used by many teachers. Although such devices should be short-lived, they are so useful during the propaganda stage that the slight expense of stamps or stickers is a good investment. Thermometer graphs, balances, teeter boards, and waxing and waning moons were all helpful in encouraging the laggard by symbolizing

his weight gain, and such informal variations of the weight graph are also of interest above the first grade. The most efficacious use of many of these devices to measure individual progress has been in combination with some sort of group competition (*Figures 46 and 47*).

The purely arbitrary nature of this zoning of weight,[1] and its attendant danger was understood by these teachers. Its use was safeguarded by throwing the major emphasis constantly on progress to and through the next higher level. Since, however, it was hoped that the plan developed in the Fargo classrooms might be one sufficiently generalized to be helpful to teachers elsewhere, its one serious inherent weakness caused it to be discarded in the assembling of the permanent program.

This weakness was the danger of self-satisfaction—complaisance with having escaped the lower zone—rather than the urge toward the next higher. The "blue" card group are too apt to be content with being not "red." The "white" card group, likewise, are in danger of entertaining a false feeling of security with being merely up-to-weight, when the actual condition and habits may still be very faulty. The consensus of experienced opinion is that practically all underweight children have remediable defects of physical condition or of behavior program, but that the converse does not hold true. Up-to-weight children frequently are just as far from optimum condition as are those underweight.

Underweight was not regarded as an epithet by teachers or children, so the question of injustice in calling attention to the condition by a colored card did not arise. The teacher's program must be planned for normal children.

[1] The more detailed consideration of the classroom use of weight is found in Part III of the Fargo report.

Her responsibility ends where the physician's begins. Any child who carried out this drastic health behavior program completely for a few months, with correction of all remediable defects, and did not gain would have been considered a problem for the family physician. No such case appeared, so the problem was merely an academic one in these classrooms.

Another difficulty connected with the classroom use of weight in the initiation of a program disappears as the program, necessarily telescoped in the installing, is drawn out to its normal length—covering the seven years from kindergarten to junior high school. This is the case of the slender child whose rate of growth in height differs so materially from the steadier development of the average build. While the average child grows at a rate which permits musculature and calcium deposition to keep pace with growth in skeletal length, there are frequent instances when the slender child spurts ahead in length at a rate that makes impossible the coincident growth in weight necessary to keep the child at all times up to the average weight of the standard tables. Teachers are so thoroughly acquainted with the hypothetical nature of the "average" that they are able quickly to allay the distress of an occasional parent who fears that being temporarily below an average is a sign of inferiority.

To the child—granted that the whole program is being actually carried out and there are no removable defects—the teacher smilingly says, "keep on, you'll catch up." And he does. If he does not, under the conditions specified, the fact that he was a case for individual consideration by the physician will have become self-evident long before the years of grade school life are over.

The gain necessary to keep either a slender child or a short

one (one-half and one-third pounds a month respectively) up to the average for their respective builds according to the standard[2] tables is so slight, that the difficulty of bettering it enough to tilt the curve at a catching-up angle is really a negligible one. A child "free to gain" who actually carries out the recommended daily program cannot help gaining. Every inquiry into failures resulted in the disclosure of loopholes in the program or specific need of a physician's care.

It goes without saying that possibility of success is prerequisite to the use of any incentive. Fargo experience justified the use of gain at a catching-up rate as an incentive to effort.

Group Competition

The virtue of group competition is not that the child is pulling against the other side, but that he is pulling with his own side. He belongs. In a school of mixed social levels, especially, a regrouping and pulling together is sometimes welcomed by the teacher, who sees many a defense reaction behind apparent insubordination, and many a brave front concealing hurt pride. It makes for democracy to have Mary welcome Jennie's aid to their "side" because Jennie went to bed early all one month—regardless of the fact that Jennie's mother washes for Mary's mother.

Row against row, room against room, school against school—all help in sustaining flagging effort until habit is unconscious. The smallest symbols of victory suffice. While small use of group emulation is made in the first grade, it is increasingly useful in the older grades, especially in a new program where there are eight or ten years of bad habits to be supplanted.

[2] Wood-Baldwin tables.

The desire to "b'long" in itself is a powerful incentive. Having one's picture taken with the bunch—the bunch being those qualified by health performance—was found in Fargo to be the paramount incentive among artificial spurs to continued effort. Buttons, pins, and badges work the same way. The use of "milk buttons"[3] in the early spring, when the appetite for milk is lowest, caused a phenomenal increase in its consumption. Many teachers used the club idea for pre-adolescent children. One fifth-grade teacher was a member in good standing of both the "U. T. W.'s" (up-to-weights) and the "W. W. G.'s" (we will grow) and by skilful suggestion turned the gang spirit into legitimate channels. The U. T. W.'s had a party or picnic with graham crackers and milk for refreshments after school for every member of the W. W. G.'s who graduated into their membership. This social event, in a district in whose homes the common meal was a rarity, had no small value in itself.

All sorts of informal competition sprouted when one room, glorying in having conquered some item of health observance, would post "100 per cent milk" or some similar boast on its door, and all the other doors would blossom out with similar proclamations. Composite posters were made, and likewise pinned on the classroom door as a challenge to other rooms to do as well. In October, for instance, a picket fence was cut out of paper—with as many pickets as there were children in the class, and on each child's picket appeared a jack-o'-lantern as soon as he had won his fight with whatever habit was most difficult at the time. Races—a mile for a pound gained, or rival bank accounts—a dollar for a point on the health records, and many other small enlivenments of the cumulative record of health

[3] Supplied by the National Dairy Council at one-quarter cent each.

progress came into play to spur the daily struggle. Of all competitive groupings, only the division by sex was avoided; sex antagonism in the fifth or sixth grade gives too much edge to competition.

This encouragement to progress is propaganda, and also drill. Complicated and sharpened by group loyalty, it becomes a form of sportsmanship—competition in ultimate fitness. The teacher probably needs much less of this sort of incentive than she thinks, but the unvarnished teaching of health as just one more subject in the curriculum does not get children past the point where lagging community habit nullifies the effect of the health program at some vital point.

The most conspicuous use of group emulation was the city-wide "cup contest." In vain did the supervisor insist that it was not a contest at all, but a reward of merit, since the award was based on points for which the children were already consciously striving. But in vain; it became a race, with the virtues and faults of interschool competition.

At the beginning of the spring semester of the first school year of the demonstration the Commercial Club offered a silver trophy cup to the school making the best record in the established health program. The items counted were the percentage of "white cards" to enrollment, the average gain in weight over a seven-months' period, the average number of points kept out of a possible complete observance of the daily health program, the rating of the school as to sanitation, and the average school attendance for three quarters of the year. This was out-and-out propaganda to secure united effort more quickly than could be accomplished by precept alone. Its apparent effects were these:

1. It unified adult effort at once.
2. It secured immediately a more complete observance of the behavior routine in the homes than could have been won

without some intensive propaganda, and at the same time created a genuine interest in the reasons for the routine.

3. The improved health of the children was so apparent as to secure the continuance of the program after the contest was over.
4. It led teachers and nurses to a degree of accuracy in taking and recording the competitive data which was necessary to the success of the program and which it would have been hard to secure so quickly in any other way.

Some plan of city-wide propaganda to bring quick returns while the slower process of education is getting under way is an important and probably an essential feature in the introductory stage of any community health program. The one dangerous element in the plan used in Fargo was the competition on equal terms of the public and parochial schools, in which differences of organization and procedure were pertinent. Fargo sportsmanship weathered this difficulty and the emphasis on the need of one health régime for all children was an excellent thing. The contest was once repeated and then abandoned, its work finished.

The appeal of group contests to dawning gregariousness justifies a group of devices which the supervisor frankly disliked at the beginning. These were the apparently meaningless pussies and rabbits and Easter misses and what not which were drawn on the board to be checked or dotted or dressed by teams of children as they won the right by their health achievements (*Figure 48*). A study of the actual psychology of this process in the classroom leads one to the conclusion that these are really graphs—the dots or checks being equivalent to bars or squares—with the added charm of play value through personification of the graph and the sense of group competition. Rivalry in adding portions to the blackboard drawing of a snow man before melting weather came added fun to the real struggle of one room.

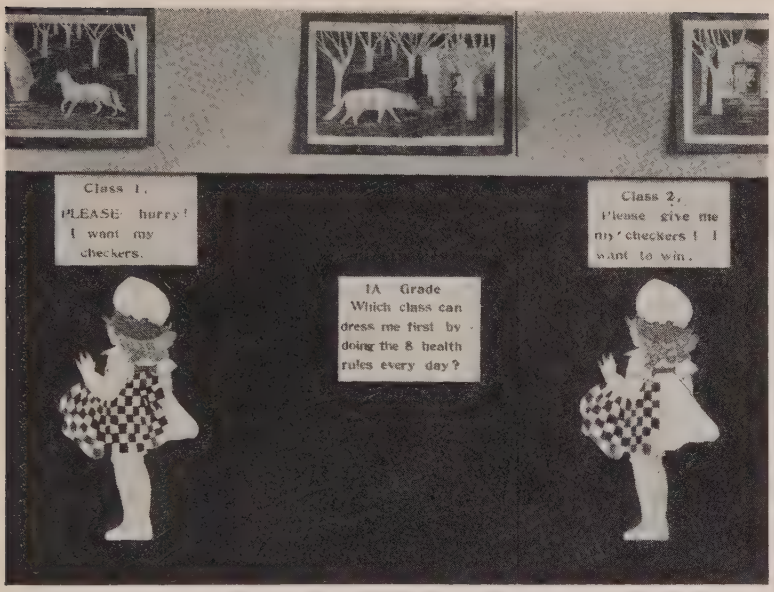

FIGURE 48. These small figures are really graphs. The element of group rivalry is a help to willing but fallible memories: it conserves rather than creates an attitude toward health behavior.

The Child Against the Group

Among the various competitive devices the granting of special rewards and privileges for success in a common effort presents the greatest dangers, and the least desirable form of all is the offer of rewards of intrinsic desirability. The danger here is that the reward, rather than the health achievement, will be the goal of effort. The one form in which this device has been frequently used is the health party, with attendance limited to those successful in some element of the health program. A little shifting to group emphasis makes it possible to elicit sound educational value from the health party. Let it be printed very small that one earnest seeker after perfect records offered a nickel to every child with a perfect day. Let it be printed still smaller

that in one case a blacklist, naming children who had failed to keep the program, was put on the board. This happened but once in the three years.

Special symbols and privileges, not in themselves pleasurable, but valued as indications of favor, are frequently used in the primary grades. A child outgrows the stage when to go on errands, to wash the blackboard or the milk bottles, or to pass out supplies, is a pleasure which outweighs the movie or the lollipop. But in the first grade these or any other marks of the favor of the beloved teacher are as precious as the sleeve on the knight's cassock. The younger the pupil the fewer special devices are needed. The teacher's commendation is literally all-sufficient, and old habits are not so firmly imbedded as to need added tools to dislodge them. Often the star after the child's name on the board and on the weight chart, and most of all on the report card taken home, is enough. Every teacher in this group had a rubber-stamp star which, used sparingly, was a real help. Several teachers had punches and punched holes in symbolic cards—clock faces, milk bottles, and the like—as a recognition of accomplishment. One teacher worked up an effective sequence which began with such punched cards, then marked a health record on the board beneath the picture of the appropriate activity, then arranged a sand table with the appurtenances of "Healthland" in which successful healthkeepers were allowed to deposit paper doll effigies for the day. This teacher's pupils so wished to do what she suggested that mothers sometimes had to call to get some harmless item of family routine approved. "He won't eat eggs," reported one mother, "because he says you didn't say he could." These children did not keep the health rules for the sake of a punched card or a place on the sand table; those were clearly understood to be symbols, helping small

memories to accomplish what the eager hearts wanted to do.

Best of all was the simple habit of clapping for a child's success. Nothing so fills the child's heart as the spontaneous applause of classmates. This presupposes a solidarity of public opinion that cannot be artificially simulated at this age. Often a visitor following the sound of clapping into some room was greeted with an enthusiastic "Jerry went to bed all week at eight," or "Esther gained." Pinning a symbol on Jerry or Esther is of value only if there is public opinion behind it; if there is it is a tremendous thing.

Withholding a coveted privilege from a group or conferring it for 100 per cent achievement is a cheap and vicious way of creating an unsound public opinion. This (used experimentally in a very few instances in Fargo) is indefensible. It is really a severe punishment for nonconformity —unnecessary, for genuine public opinion in favor of a health measure is easily aroused.

The vegetable man and the dried fruit man were strange outcroppings of incentive. Children who had done their duty by vegetables or dried fruit brought samples of these commodities and built them into a fearsome creature which gave them some mysterious pleasure. The teachers capitalized this interest in various ways. At St. Mary's School, particularly, a real educational project culminated in a "party" when Spark Plug (*Figure 49*) was eaten raw with salt. Strange to say, many homes thereafter reported an increased demand for raw cabbage, celery and tomatoes. Such occasional departures from the straight and narrow way of pedagogy do help to make fun out of the monotony of consciously doing the same thing the same way every day—and that monotonous stage must be weathered before unconscious habit takes charge.

FIGURE 49. Spark Plug added a touch of fun to health behavior drill, and then passed on to his reward: he was eaten by the class.

The charm of being photographed has already been mentioned as a group incentive; it was equally powerful when one child at a time was singled out as a reward. No matter how poor or how unflattering the picture the child whose counterfeit was posted in plain view never seemed disappointed in himself; quite the reverse. Many a child would break every health rule if his picture were to be taken and posted as an awful warning. A good many teachers used their kodaks freely in most constructive fashion and one excellent teacher made this her only adventitious device. This is the one method, in this group, which is even more effective with older children than in the primary grades. If we would admit it, it has equal force in the years of maturity.

Most teachers at some time or other made some graphic record of group progress. One of the commonest was the listing of children successful with a given habit on a poster representing that habit. When "everybody" could be

written across the poster there was great rejoicing. One mistake was to write the names of children beside the name of some vegetable which they did not like, to be crossed out when the vegetable became palatable. This happened but once.

That the items of the behavior program should be within the possibility of attainment by every child was held, as in the case of growth, to be prerequisite to the stimulation of effort. Milk for indigent children having in the beginning been assured by the Board of Education, no other item of the required régime was beyond attainment by the child's own effort, aided by the intelligent and persistent team work of the teacher, nurse, school physician and other adult members of the child's school community.

Group opinion was always so strongly in favor of the health program that there was, after all, little feeling of rivalry between the child and the group. The child who gained the most was sometimes singled out for mention—but *amount* of gain was never made a goal. Rewarding the individual for his success was more often a matter of welcoming the new victor to the ranks of those already successful.

These rewards look insignificant in print; they need to be interpreted in the light of the sparkling eyes turned on the new recruit to the Cause, and the glow of triumph haloing the towhead. Another pink flower drawn on the tree on the blackboard and labelled "Olga"; another brick, colored red, in the castle of health, with George's initials; these are proud initiatory rites. If they come after public opinion is generated and effort is strong for the health purpose itself, these devices to mark progress seem legitimate. It may not be logical for the dime close to the eye to look bigger than the dollar at arm's length—but it does. The child accepts the fact that he will not grow up so well and

strong if he does not go early to bed—but the effect is so far off that the present enjoyment of another hour of play has the greater pull. Against this the immediate counter-inducement of pleasing "teacher" is usually sufficient in the lower grades, but it is not surprising that many of the best teachers feel that a bit of reinforcement that brings out personal pride or which capitalizes the gang spirit is strategically important.

The troublesome thing about devices is that they soon lose their force—the more artificial they are, the sooner they die—and the teacher who relies on them too much is constantly put to it to find something new. The teacher who discovers that children's interest does not need much change, and who can run the same device the year through as a minor factor in her program, as many did in Fargo, has so nearly reached the summit that she might just as well take the last step and throw away the device. The discovery of her own powers will be a powerful tonic.

But there are exceptions. Last year one of the best teachers in Fargo was puzzled to find herself using artificial aids which she had discarded two years before. "These children seem to need more help than any I have had," she explained. Good teaching will always be a matter of meeting individual needs with specific adjustments; the teacher herself fluctuates in her power of sustained "assumption." Some children come from homes where there is no routine, no morale, no foundation for habit, where health progress is a matter of daily insistence on a vegetable and on milk money, a nightly remembering to go to bed while the radio is still going, and so on forever. One excellent teacher in such a district seemed unnecessarily tied to competitive devices. At the request of the supervisor she consented to experiment without them. Six weeks later she reported failure and went back to her

old way. With these children there had to be constant guerrilla warfare; frequent remotivation and an unending supply of immediate appeals were in order, and the device played an essential rôle.

Even so, the high watermark of competitive devices in the Fargo schools has been passed. Today only the periodic records of progress in health habits and in weight, and the classroom wall charts are commonly found, though the best teachers still remotivate the health endeavor of their pupils now and then, to encourage new pilgrims and keep the old from backsliding. They know that eternal vigilance is the price of continued success.

CHAPTER V

CONCLUSION

THE diverse pedagogical meanderings through which the teachers led the health interest of Fargo children, beginning with their departure from textbook instruction as an end in itself, and returning to the textbook as the basis of instruction in health as a natural science, have been the theme of the foregoing pages. The detail with which this pilgrimage has been charted seems necessary, even at the risk of creating the impression of great confusion; it is less dangerous than the alternative of arbitrary selection of this or that method as the best way of getting results—for what seems best to the supervisor might in no way be a natural procedure for another teacher with different professional equipment.

The net conclusion of the study is that health is sufficiently simple and fundamental in its appeal not to wait upon the development of standardized methods of instruction. Unexpectedly gratifying is the realization that health education—today, when the new pedagogy is still in its infancy—is one of the most powerful agencies for bringing about the new freedom and individual self-direction which is the goal of progressive education.

Some of the best examples of teaching quoted in the preceding pages were developed before the demonstration got under way. Some classrooms were already encountering the "unit experience" of the true project, and in many others the project spirit prevailed in spite of curriculum compartments. Teachers took an individual interest in their pupils before the present program began. What has

happened is that interest has been focussed. Many parallel lines of effort have been brought together to bear on a unit program of essentials until that program has been welded into a routine. Preliminary propaganda brought the emotional situation to kindling temperature, and so the welding has been done in a flame of intensity of endeavor which seems out of all proportion to the simplicity of the methods used.

Just why the apparently formal program produces such enthusiastic and joyful activity in the children is a difficult question. The reason probably lies in its project nature. For most of the children this was the first time they had ever been called upon to share in a community enterprise, which, according to the leaders of their city, was of paramount importance. And it is the only community project they know in which their own childish efforts are regarded by these same leaders of public opinion as being the keystone of community success. It is a real project—not one devised and camouflaged by a clever teacher to put something over. For the first time the school has given the child the thrill of real accomplishment in terms of life values.

There has been little change in teaching methods in the Fargo schools. The connection of the subject with life has merely been established.

APPENDIX

THE HIGHER GRADES

THE demonstration plan involved a five-year program. The first two years were to be devoted to getting the foundation thoroughly established in the elementary grades; the third to the trial heat of the elementary program and the experimental working out of plans in the junior high; the fourth to the trial heat in the junior high, with an eye to the working out of the elementary program, with the study of the high school situation as the major problem. The fifth year was, in the original plan, to see all three levels synchronized in a unit program.

The fact that the health education program was taken over at the end of the third year did not interrupt the pattern. The new supervisor took over the program at the scheduled level, and the synopsis which follows shows the pattern unbroken. The detailed report of the program in the higher levels will be published locally and can be obtained, with specific information, from Mary Beal, Supervisor of Health Education, Public Schools Fargo, North Dakota. The present program in the junior and senior high school may be summarized as follows:

Instruction

JUNIOR HIGH SCHOOL

Seventh and eighth grades: text hygiene, two days per week; gymnasium and playground, three days per week.

General science, includes field trips and observations.

Physiology and hygiene, ninth grade. Elective, from text, the elements of knowledge of the structure and function of the body.

Home sanitation, foods, clothing, and home care of the sick.

Home economics, nurse cooperating, seventh grade.

HIGH SCHOOL

Human biology, elective, tenth grade.

Personal hygiene, required.

Physical education teachers, two periods weekly.

Other content courses contribute their definitely scheduled quota of health information inherent in their specific subject matter.

Health Supervision

JUNIOR HIGH SCHOOL

1. Physician's examination in seventh and ninth grades. The medical record is transferred from the elementary grades forming a continuous record. The notes of teacher and nurse are continued.
2. The morning health inspection, with reference of special cases to the nurse, is continued as in the elementary schools.
3. Weight is taken by the physical education teachers.
4. Individualization is provided for by the "cumulative records", in the principal's office, the "case study" of the elementary grades adapted to the junior high school. Responsibility for the individual is vested in his home-room teacher.

HIGH SCHOOL

The candidates for teams only are given physicians examinations, this inadequacy fully recognized.

Morning health inspection and reporting to nurse by home-room teacher.

Weighing done by pupil and reported to home-room teacher.

Individualization provided for by:

1. Cumulative record, on which the home-room teacher reports points of health and behavior significance. This bears a form to be filled out by the teacher in lieu of the physician's examination.
   The home-room teacher is responsible for the general health oversight of her group.
2. Point scale, kept by all girls in the physical education classes.
3. Personal evaluation sheet filled out by the girl herself.

Administration

Responsibility for the hygiene of school plant and program and for the fulfillment of their duties by the members of their staffs is vested in the principals

of the schools of all three levels, elementary, junior high and high school.

Supervision

The planning of the program and the supervision of the carrying out is vested in the supervisor of health education, in cooperation with the administrative staff. Coordination and final authority is the prerogative of the superintendent of schools.

LANE MEDICAL LIBRARY

To avoid fine, this book should be returned on or before the date last stamped below.

I420
B87
1929

Brown, M.A.
Teaching health in Fargo.

NAME

DATE DUE

71618